

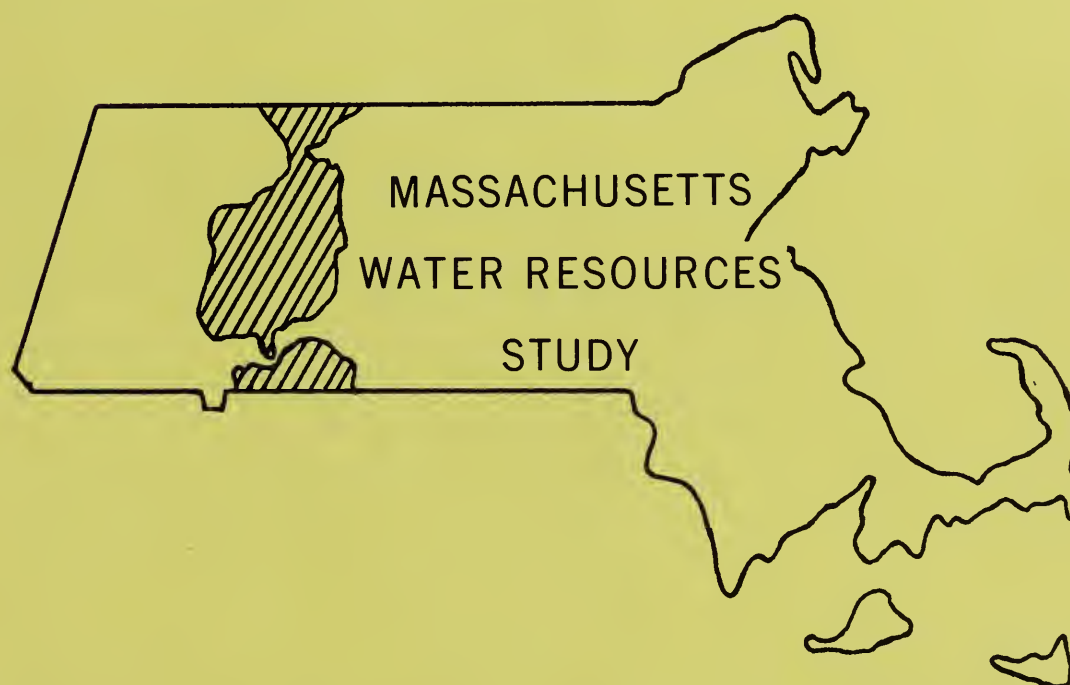
Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

Reserve
aTD395
.U54

UNITED STATES DEPARTMENT of AGRICULTURE

INVENTORY
of
POTENTIAL and EXISTING
UPSTREAM RESERVOIR SITES
NORTHERN, CENTRAL, & SOUTHERN
CONNECTICUT VALLEY STUDY AREAS



U.S. DEPARTMENT of AGRICULTURE
Soil Conservation Service
Economic Research Service
Forest Service

In cooperation with the

MASSACHUSETTS WATER RESOURCES COMMISSION

JANUARY 1975

AT-33 Bookplate
(1-63)

NATIONAL

**A
G
R
I
C
U
L
T
U
R
A
L**



LIBRARY

*1921229

FOREWORD

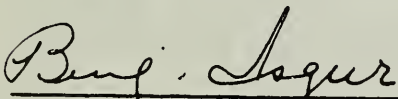
The United States Department of Agriculture, in cooperation with the Massachusetts Water Resources Commission, is participating in the Massachusetts Water Resources Study of the water and related land resources of the Commonwealth. One phase of the study is the inventorying of potential and existing upstream reservoir sites.

The Commonwealth of Massachusetts, through the Water Resources Commission, provides guidance and significant financial contribution toward this phase of the Massachusetts Water Resources Study. The Massachusetts Water Resources Commission to fulfill its responsibilities under Sections 5 through 15 of the Massachusetts General Laws requires technical and engineering data and information on potential upstream reservoir sites. The Department of Agriculture is participating in this study under the provisions of Section 6 of the Watershed Protection and Flood Prevention Act (Public Law-566, 83rd Congress, as amended) which authorizes the Secretary of Agriculture to cooperate with other federal, state and local agencies, in surveys and investigations of the watersheds of rivers and other waterways as a basis for the development of coordinated programs.

This report, prepared by the Soil Conservation Service and submitted by the USDA Field Advisory Committee to the Water Resources Commission, identifies and inventories potential and existing upstream reservoir sites within the Connecticut Valley Study Areas.

The Massachusetts Water Resources Commission will use this report, together with other reports and studies prepared by the United States Department of Agriculture and others, in the preparation of a comprehensive plan for the Commonwealth's water and land resources.

The information and data contained herein will also assist local, state and federal agencies in their specific planning activities for the coordinated and orderly conservation, development, utilization and management of the water and land resources to meet the rapidly expanding needs.



Dr. Benjamin Isgur, State Conservationist
Soil Conservation Service and
Chairman, Field Advisory Committee
U. S. Department of Agriculture
29 Cottage Street
Amherst, Massachusetts 01002



Arthur W. Brownell, Commissioner
Massachusetts Department of
Natural Resources and
Chairman, Mass. Water Resources
Commission
100 Cambridge Street
Boston, Massachusetts 02202

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY

OCT 22 1975

CATALOGING - PREP.

ACKNOWLEDGMENTS

Acknowledgment is made to those who assisted in and contributed to the investigations, studies and development of this report. These include:

Board of Supervisors
Franklin Conservation District
Hampden Conservation District
Hampshire Conservation District

Department of Civil Engineering
University of Massachusetts

Division of Water Pollution Control
Massachusetts Water Resources Commission

Massachusetts Department of Natural Resources

Soil Conservation Service personnel prepared this report. Ernest Richards was responsible for the development of the engineering phases of the report. Raymond Curran, John Gammell, and Chester Konieczny collected and processed basic site data. Donald Mills reported on geological conditions. Kathy Gastinger typed the final manuscript. James Wesoloski was responsible for editing and publication.

TABLE OF CONTENTS

	<u>Page</u>
Introduction	1
Description of Study Areas	1
Criteria	2
Investigations and Analyses	3
Costs	4
Report Format	5
Maps	8
 Subwatershed NC-07	
Potential Site Data	9
Summary Data for Potential Sites	10
Subwatershed Map - preceding page:	10
 Subwatershed NC-08	
Potential Site Data	11
Summary Data for Potential Sites	19
Existing Site Data	23
Subwatershed Map - preceding page:	24
 Subwatershed NC-09	
Potential Site Data	25
Summary Data for Potential Sites	29
Subwatershed Map - preceding page:	30
 Subwatershed CV-17	
Potential Site Data	31
Summary Data for Potential Sites	33
Existing Site Data	35
Subwatershed Map - preceding page:	36

Subwatershed CV-18

	<u>Page</u>
Potential Site Data	37
Summary Data for Potential Sites	43
Existing Site Data	45
Subwatershed Map - preceding page:	48

Subwatershed CV-19

Potential Site Data	49
Summary Data for Potential Sites	52
Existing Site Data	54
Subwatershed Map - preceding page:	56

Subwatershed CV-20

Potential Site Data	57
Summary Data for Potential Sites	61
Existing Site Data	64
Subwatershed Map - preceding page:	64

Subwatershed CV-21

Potential Site Data	65
Summary Data for Potential Sites	70
Existing Site Data	72
Subwatershed Map - preceding page:	74

Subwatershed CV-22

Potential Site Data	75
Summary Data for Potential Sites	85
Existing Site Data	89
Subwatershed Map - preceding page:	94

Subwatershed CV-23	<u>Page</u>
Potential Site Data	95
Summary Data for Potential Sites	98
Existing Site Data	99
Subwatershed Map - preceding page:	100
Subwatershed CV-24	
Potential Site Data	101
Summary Data for Potential Sites	113
Existing Site Data	120
Subwatershed Map - preceding page:	122
Subwatershed CV-25	
Potential Site Data	123
Summary Data for Potential Sites	128
Existing Site Data	131
Subwatershed Map - preceding page:	132
Subwatershed CV-26	
Potential Site Data	133
Summary Data for Potential Sites	137
Existing Site Data	139
Subwatershed Map - preceding page:	142
Subwatershed SC-47	
Potential Site Data	143
Summary Data for Potential Sites	145
Existing Site Data	146
Subwatershed Map - preceding page:	148
Subwatershed SC-48	
Potential Site Data	149
Summary Data for Potential Sites	152
Existing Site Data	154
Subwatershed Map - preceding page:	156

Subwatershed SC-49

	<u>Page</u>
Existing Site Data	157
Subwatershed Map - preceding page:	158

Subwatershed SC-50

Potential Site Data	159
Summary Data for Potential Sites	161
Existing Site Data	162
Subwatershed Map - preceding page:	162

Subwatershed SC-51

Potential Site Data	163
Summary Data for Potential Sites	172
Existing Site Data	177
Subwatershed Map - preceding page:	178



LEGEND

— STUDY AREA BOUNDARY



LOCATION OF SUB-WATERSHEDS
CONNECTICUT VALLEY
STUDY AREA
MASSACHUSETTS

INVENTORY OF
POTENTIAL AND EXISTING UPSTREAM RESERVOIR SITES

in the

NORTHERN, CENTRAL & SOUTHERN
CONNECTICUT RIVER VALLEY STUDY AREAS

prepared by the

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

in cooperation with the

MASSACHUSETTS WATER RESOURCES COMMISSION

INTRODUCTION

This report presents data on 121 potential and 70 existing reservoirs in the Northern, Central and Southern Connecticut Valley Study Areas in Franklin, Hampden, and Hampshire Counties, Massachusetts.

DESCRIPTION OF STUDY AREAS

The Northern Connecticut Valley Study Area is located in Franklin County in northwestern Massachusetts. The main rivers include the Connecticut and Falls Rivers. The Study Area, which covers about 57,000 acres or 89 square miles, is divided into three subwatershed. All of Gill, most of Northfield, and portions of six other towns are located within the Study Area.

The Central Connecticut Valley Study Area is located in Franklin, Hampshire and Hampden Counties in west-central Massachusetts. The main rivers include the Connecticut, Fort, Manhan, Sawmill, and several Mill Rivers. The Study Area, which covers about 299,000 acres or 468 square miles, is divided into ten subwatersheds. All or portions of 30 cities or towns are located within the Study Area.

The Southern Connecticut Valley Study Area is located in Hampden County, Massachusetts. The main rivers are the Connecticut, Mill, and Scantic Rivers. The Study Area, which covers about 65,000 acres or 102 square miles, is divided into five subwatersheds. All or portions of eight cities or towns are located within the Study Area.

CRITERIAPotential Reservoir Sites

The primary considerations used to identify potential reservoir sites were: suitable topography for a dam and reservoir, sufficient drainage area to maintain the proposed reservoir, and a relatively undeveloped pool area.

The following criteria were used as a guide in site selection:

1. Drainage area -- larger than one-half square mile, but not greater than 50 square miles.
2. Ratio of drainage area to beneficial pool area -- not less than 10 to 1.
3. Minimum beneficial pool depth -- 7 feet at the dam.
4. Minimum beneficial pool area -- 10 acres.
5. Minimum beneficial pool capacity -- 100 acre-feet.
6. Maximum beneficial pool capacity -- storage volume equal to 25 inches of runoff from the drainage area.
7. Maximum height of dam -- 100 feet.
8. Pool area relatively undeveloped -- no housing developments, industrial areas, or major highways inundated.

Existing Reservoirs

Existing reservoirs were located using the U.S. Geological Survey (USGS) quadrangle sheets. Two criteria were used to determine sites to be included in this report:

1. Surface area -- at least 10 surface acres or a pond identified by name on the USGS topographic map.
2. Man-made dam -- natural ponds and beaver dams are excluded.

The dams along the Connecticut River are not included in the inventory. Their primary function is to provide a head differential for generating electricity and not to provide water storage or increased surface area.

INVESTIGATIONS AND ANALYSES

Potential Reservoir Sites

Sites were located using the latest available USGS 7½ minute quadrangle sheets. Natural basins, or topography favorable for storage of water, and an undeveloped pool area were the primary considerations in the initial site selection. Watershed boundaries were delineated on the quadrangle sheets and the drainage area was determined for each site. Water storage areas and volumes available upstream of the site centerline were calculated. Data were also obtained to calculate the volume of earthfill required for the dam and any supplementary dikes that might be needed to maintain a reservoir.

At each site a field reconnaissance was made that included an inventory of land and facilities (man-made structures) that would be affected if a dam and reservoir were developed at the site. If it was determined that the reservoir would flood extensive man-made facilities, or a study of the elevation-area storage data showed that the site did not meet criteria for the study, the site was dropped from further consideration.

A surficial geologic investigation was made of each potential site to determine any obvious geologic conditions that might affect the waterholding capability or require extensive foundation preparation. A preliminary geological report was prepared which outlined the types of materials that might be expected at the site and their effect on construction costs and waterholding capabilities for the site. The report of geologic conditions was based on the geologist's interpretation following the surficial investigation of the site and surrounding area. No borings were made and subsurface conditions may vary from those indicated in this report.

Hydrologic and hydraulic data were calculated using methods developed by the Soil Conservation Service. Rainfall data were obtained from Technical Papers 40 and 49, U.S. Department of Commerce, Weather Bureau. Preliminary structure site analyses for several levels of development for each site were processed by computer, using a program which determines the most economical type of principal spillway; determines the runoff and peak flow for the 100-year frequency, 10-day duration, principal spillway design storm; routes the design storm to set the emergency spillway crest; performs other routings to determine the design high water and top of dam elevations; calculates embankment yardage and other construction quantities; determines the total estimated cost of the reservoir; and calculates "safe yield" for water supply purposes.

Existing Reservoirs

An inventory was made of 70 existing reservoirs that cover at least ten acres or are identified by name on the USGS quadrangle sheet, and are formed by a man-made dam. The reservoirs were located using the USGS quadrangle sheets. An engineer made a field reconnaissance to determine the physical condition of each structure and to assess the potential for expansion of the reservoir. While at the site, photographs were taken. Selected photographs are included in this report. Ownership and use information for the reservoirs was obtained from records of the Massachusetts Department of Public Works, the Massachusetts Water Resources Commission and from local interviews.

COSTS

Preliminary cost estimates for potential reservoir sites were based on construction costs and land values as of 1972. The cost estimates include: (1) construction costs; (2) contingencies; (3) engineering and administrative services necessary for surveys, geology, final design, and construction inspection; (4) cost for land required for the reservoir and construction of the dam and spillway; and (5) costs associated with purchase or relocation of man-made facilities affected by the constructed reservoir.

Construction costs were based on recent dam-construction contract costs in Massachusetts. A factor for contingencies, equal to 15% to 35% of the construction cost, was included to account for items that were not considered at this intensity of study. Engineering and administrative services ranged from 20% to 40% of the construction cost.

Costs for land acquisition were based on an evaluation of current real estate transactions and market conditions. Land with potential for development was valued at from \$1,000 to \$10,000 per acre; land with little development potential was valued at from \$200 to \$500 per acre. Land values also varied from site to site based on the proximity to developed areas and highways, development taking place in the area, and suitability for development. Land needed for the dam, spillway, and design high water pool was included in the land acquisition cost.

Cost estimates are presented on the basis of a cost per acre-foot of storage and cost per surface-acre to provide a comparison between different sites and different levels of development at the same site. Costs are based on preliminary estimates; firm cost estimates for any site can be determined only after completion of detailed geologic and engineering investigations, final structural designs, and land appraisals.

No cost estimates are included for existing reservoirs.

REPORT FORMAT

The report is divided into sections based on the eighteen subwatersheds in the study areas. The location map, placed after the Table of Contents, outlines the area covered by each subwatershed. To aid local residents in determining which sites are located in their city or town, the Municipal Index of Sites lists the site identification numbers for potential and existing reservoir sites within each municipality and the page number of this report on which data are recorded.

Each subwatershed section provides site data for the potential and existing reservoir sites located within the subwatershed which are included in this report.

Potential Reservoir Sites

Data for potential reservoirs are presented in the following format:

- Location:** includes a narrative description of the location of the site by reference to nearby roads, railroads, or other physical landmarks. In addition, the latitude, longitude, and USGS quadrangle sheet name are provided for more accurate location.
- Facilities Affected:** describes any man-made facilities that would be flooded by a reservoir at the potential site. The elevation of existing facilities was estimated during the engineer's field reconnaissance with the aid of the USGS quadrangle sheets.
- Geologic Conditions:** provides a summary of the preliminary geologic report. The material in the abutments (the valley sides) and the foundation (the valley floor) is described. An estimate is made of the depth to bedrock and the probable type of rock. The availability of fill material which could be used in the dam construction is noted. Possible leakage problems are indicated and the waterholding capability of the site is subjectively described as "good," "fair," or "poor." The waterholding capability statement is based on the geologist's interpretation of the surficial conditions observed during the field reconnaissance.
- Engineering Notes:** provides information which should be helpful in preliminary design of a dam. One of the abutments is recommended as the location for an excavated emergency spillway. If an excavated emergency spillway is unable to carry the required flows at safe velocity, the need for a concrete emergency spillway is noted.
- Public Ownership:** indicates that some portion of a reservoir site is located on land owned by a governmental or quasi-public unit.

Sites which meet study criteria have been analyzed using a computer program which develops preliminary structure site analyses for several levels of beneficial pool. Results of the computer program are presented in the tables entitled "Summary Data for Potential Upstream Reservoir Sites" at the end of each subwatershed section. Two information lines contain data on site drainage area, USGS quadrangle name on which the site is located, latitude and longitude of the site, site rating, stream water quality, and principal spillway design storm runoff and peak flow. The site rating is based on geologic conditions and the expected waterholding capability. Sites are given one of the following ratings:

1. Suited for deep permanent storage (over 10 feet in depth).
2. Best suited for shallow water storage (3 to 5 feet maximum depth).
3. Best suited for temporary storage (e.g., floodwater and sediment storage).

In order to furnish the most data for potential reservoir sites, each site was considered to be suitable for deep permanent storage (rating "1") for purposes of design and analyses. The rating for any site could change based on detailed geologic investigations.

Stream water quality ratings are based on classifications assigned by the Division of Water Pollution Control, Massachusetts Water Resources Commission, and published in "Water Quality Standard," June 1967, and are as follows:

- "Class A -- Waters designated for use as public water supply in accordance with Chapter 111 of the General Laws. Character uniformly excellent.
- "Class B -- Suitable for bathing and recreational purpose including water contact sports. Acceptable for public water supply with appropriate treatment.
Suitable for agricultural, and certain industrial cooling and process uses; excellent fish and wildlife habitat; excellent aesthetic value.
- "Class C -- Suitable for recreational boating; habitat for wildlife and common food and game fishes indigenous to the region; certain industrial cooling and process uses; under some conditions acceptable for public water supply with appropriate treatment. Suitable for irrigation of crops used for consumption after cooking. Good aesthetic value.
- "Class D -- Suitable for aesthetic enjoyment, power, navigation, and certain industrial cooling and process uses. Class "D" waters will be assigned only where a higher water use class cannot be attained after all appropriate waste treatment methods are utilized."

The Summary Data for Potential Upstream Reservoir Sites tables also contain data for as many as six possible levels of development at each site. Elevations of the beneficial pool, emergency spillway crest, design high water, and top of dam are shown along with pertinent storage volumes, surface areas and depths. Total cost expressed in dollars per acre-foot of storage and dollars per surface-acre are provided to aid in comparison of levels of development. The emergency spillway type which was used in the preliminary design is indicated by an emergency spillway type code explained in the table notes.

These tables are photo-reductions of the computer output sheets. Elevations are shown to the tenth of a foot and costs to the nearest \$10, but are not to be considered that accurate because of the limited investigations made with preliminary data. All the Summary Data Tables are based on preliminary reconnaissance-type investigations and computer-produced structure designs. Additional detailed engineering, geologic and design investigations must be made before final site selection, land acquisition and final design would be practical.

Estimated safe yield for each potential reservoir are also shown on the tables and were based on information extrapolated from data developed by Professor G. R. Higgins, Civil Engineering Department, University of Massachusetts. These estimated safe yields are based on a 95% chance, or the minimum yield that could be expected 19 years out of 20 -- taking into consideration reservoir storage-volume and expected runoff. These data do not consider evaporation, seepage, or prior upstream usage losses.

The Committee on Rainfall and Yield of Drainage Areas of the New England Water Works Association has recommended a figure of 600,000 gallons per day per square mile as a maximum economically feasible safe yield. Data for some of the potential sites in this report show a safe yield above 600,000 gallons per square mile per day. These higher values are useful to define the upper portion of a discharge-storage curve for preliminary analysis. For detailed evaluation of a potential site or water supply purposes, the recommendation of the New England Water Works Association should be considered.

Existing Reservoirs

Site data for existing reservoir sites are presented in the following format:

Location: of the dam is indicated by reference to nearby roads, railroads, or other physical landmarks. The appropriate USGS quadrangle sheet, latitude, and longitude are provided for more accurate location.

Physical data (surface area, height of dam, and drainage area) were estimated from the quadrangle sheet and by field reconnaissance.

Potential
for

Expansion: potential is estimated and any major man-made facilities which would be affected by an enlarged reservoir are noted. Some of the site narratives contain the phrase "Significant expansion

does not appear practical." The phrase is used to indicate that although the pool level might be raised by a few feet or the pool area increased by a few acres, any greater expansion does not appear feasible due to topography or facilities which would be flooded.

In some instances, the drainage area of the reservoir does not meet the criteria requiring a 10 to 1 drainage area to pool area ratio, below which there may be relatively high evaporation losses. An increase in reservoir surface area might increase evaporation losses to a point where the reservoir could not be maintained during the summer months. These situations are indicated by the statement "The small drainage area limits expansion potential."

Remarks: includes a description of the dam and spillway system. Construction materials, spillway type and size, and condition of the structure are noted.

Ownership
and

Use: is indicated, if available. In some cases, the pool is not maintained for a specific purpose, but may have incidental use for recreation. This is probably the situation for existing reservoirs which are indicated in the Massachusetts Department of Public Works records as being used to "store water." Typical of these sites are old mill dams which are no longer utilized for mill power.

Selected photographs of existing dams, spillways, and reservoirs are included in the report.

MAPS

Individual subwatershed maps appearing at the end of each section indicate the location of the potential and existing reservoir sites in that subwatershed. The maps are reductions of mosaics prepared from 7½ minute USGS quadrangle sheets (1" = 2000' scale). The quadrangle sheets used and publication dates are listed on the maps. Potential sites are indicated with a red rectangle surrounding the site number. Existing reservoirs are identified by a red circle surrounding the site number.

NORTHERN CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed NC-07, Ashuelot River

The Massachusetts portion of the Ashuelot River subwatershed covers about 4,300 acres in the town of Warwick, in Franklin County.

The major streams are Mountain and Kidder Brooks which originate in Warwick and join to form Mirey Brook which flows north to its confluence with the Ashuelot River in Winchester, New Hampshire.

Geology of the subwatershed is characterized by a thin mantle of soil underlain by gneiss bedrock.

One potential reservoir site was studied. There were no existing reservoirs which met study criteria.

POTENTIAL SITE NC-0701

Location: On Kidder Brook about 2300 feet upstream from Old Winchester Road in Warwick, Mass.

Mt. Grace, Mass. - N.H. USGS quadrangle

Latitude: 42°42'22" Longitude: 72°20'11"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	High tension lines	850
	Robbins Road	800

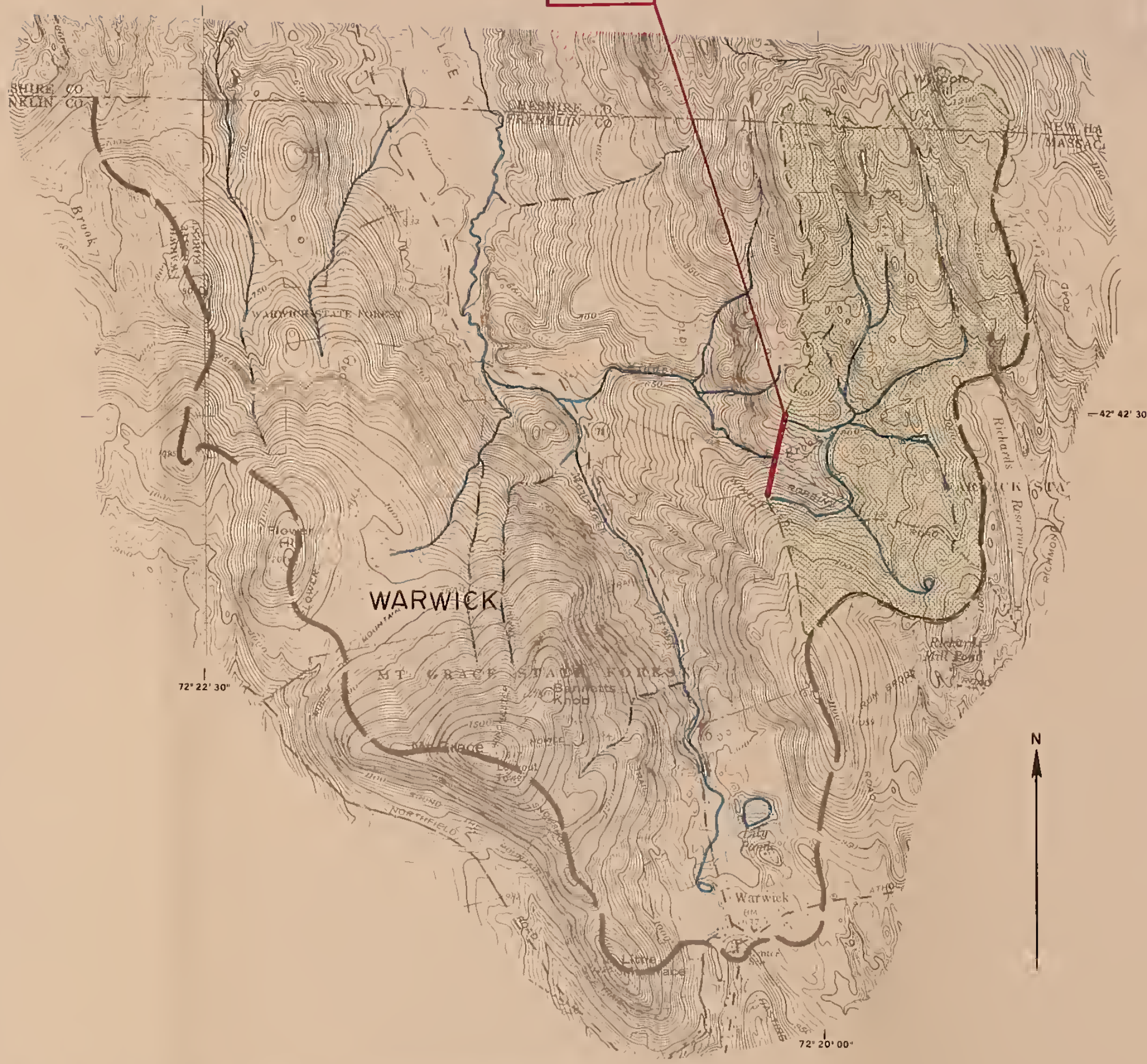
Geologic Conditions: Both of the abutments are gneiss bedrock with a thin soil mantle. There is bedrock outcropping in the foundation. Surficial deposits are swamp, englacial drift and gneiss bedrock. Waterholding capabilities appear to be good. Insufficient borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

Public Ownership: Above elevation 820, a small area of the pool would be in the Warwick State Forest.







0701



SOURCE - U.S.G.S. QUAD SHEETS
MT. GRACE - 1961
NORTHFIELD - 1961



LEGEND

-  WATERSHED BOUNDARY
-  DRAINAGE AREA ABOVE STRUCTURE
-  POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
-  EXISTING POND OR RESERVOIR

ASHUELOT RIVER (NC-07)
NORTHERN CONNECTICUT VALLEY STUDY AREA
MASSACHUSETTS
EXISTING AND POTENTIAL RESERVOIR SITES
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

NORTHERN CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed NC-08, Pauchaug Brook

The Pauchaug Brook subwatershed covers about 37,400 acres in Bernardston, Erving, Gill, Northfield, and Warwick; all in Franklin County.

The major stream is the Connecticut River from the Massachusetts-Vermont state line downstream to the Turners Falls' dam.

Geology of the potential reservoir sites is characterized by glacial till underlain by gneiss or schist bedrock.

Twelve potential reservoir sites and four existing reservoirs were studied.

POTENTIAL SITE NC-0801

Location: On Lovers Retreat Brook about 4400 feet upstream from Bent Pond in Warwick, Mass.

Northfield, Mass. - N.H. USGS quadrangle

Latitude: 42°43'12" Longitude: 72°23'20"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Trail Road	680
	High tension lines	680

Geologic Conditions: Both of the abutments are thin silty sand with gravel, cobbles, and boulders. At about elevation 750 on the right abutment is englacial drift with outcrops of gneiss bedrock. Surficial deposits are swamp, englacial drift and gneiss bedrock. Depth to gneiss bedrock in the foundation is estimated to be from 5 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 675 an auxilliary dike will be required.

POTENTIAL SITE NC-0802

Location: On East Wait Brook about 4,000 feet upstream from Caldwell Road in Northfield, Mass.

Northfield, Mass. USGS quadrangle

Latitude: 42°42'40" Longitude: 72°29'37"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Vernon Road	400

Geologic Conditions: Both abutments are gneiss bedrock with a thin soil mantle. Depth to gneiss bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

Public Ownership: Above elevation 390, a portion of the reservoir would be within the Northfield State Forest.

POTENTIAL SITE NC-0803

Location: On Mill Brook about 1,200 feet downstream from White Road in Warwick, Mass.

Northfield, Mass. USGS quadrangle

Latitude: 42°42'02" Longitude: 72°23'09"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	White Road	865
	Warwick Road	830

Geologic Conditions: Both abutments are thin silty, and with gravel, cobbles, and boulders (glacial till) with gneiss bedrock outcrops. Surficial deposits are swamp, glacial till and gneiss bedrock. Depth to gneiss bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 875 an auxilliary dike will be required.

POTENTIAL SITE NC-0804

Location: On Bennett Brook about 100 feet upstream from Mt. Herman Station Road in Northfield, Mass.

Northfield, Mass. USGS quadrangle

Latitude: $42^{\circ}21'27''$ Longitude: $72^{\circ}29'13''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	375
	House	365
	House	355
	Caldwell Road	340
	Vernon Road	340
	Cottage	335

Geologic Conditions: Both abutments are ice-contact sand and gravel. Surficial deposits are ice-contact sand and gravel. Depth to bedrock in the foundation is estimated to be over 90 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 365, two dikes will be required, and three dikes if developed to elevation 375. Refer to Existing Site NC-0804 (Sawyer Pond) for data on the existing dam and reservoir at this site.

POTENTIAL SITE NC-0805

Location: On Dry Brook about 7,300 feet upstream from State Route 10 in Bernardston, Mass.

Bernardston, Mass. USGS quadrangle

Latitude: $42^{\circ}41'23''$ Longitude: $72^{\circ}31'08''$

Facilities Affected: None below elevation 550

Geologic Conditions: Both abutments are thin discontinuous outcrops of silty sand with gravel, cobbles and boulders (glacial till) and outcrops of schist bedrock. There is a gravel terrace at the toe of the right abutment. Surficial deposits are swamp, glacial till, and schist bedrock. Depth to schist bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be fair. Leakage is expected at the toe of the right abutment and possibly in the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE NC-0806

Location: On Bailey Brook about 850 feet upstream from Mt. Herman Station Road in Northfield, Mass.

Northfield, Mass. USGS quadrangle

Latitude: $42^{\circ}40'50''$ Longitude: $72^{\circ}29'47''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Railroad	370
	Route 10	362
	Telegraph lines	360
	House and Barn	360

Geologic Conditions: The left abutment is outwash sand and gravel with bedrock outcrops. The right abutment is bedded silty sand and gravel. Surficial deposits are swamp, outwash sand and gravel, and gneiss bedrock. There are bedrock outcrops at the centerline of the dam. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE NC-0807

Location: On Dry Brook about 1,700 feet upstream from State Route 10 in Bernardston, Mass.

Bernardston, Mass. USGS quadrangle

Latitude: $42^{\circ}40'34''$ Longitude: $72^{\circ}30'42''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House and garage	460
	Purple Meadow Road	450
	A-frame chalet	430
	Cottage	410

Geologic Conditions: Both abutments are thin discontinuous deposits of silty sand with gravel, cobbles and boulders (glacial till) and schist bedrock. Surficial deposits are terrace sand and gravel, glacial till, and schist bedrock. Depth to schist bedrock in the foundation is estimated to be 40-50 feet. Waterholding capabilities appear to be fair to poor. Leakage is expected in the foundation. Previous borrow material for dam construction was located near the site; impervious material was not located.

POTENTIAL SITE NC-0807 (cont'd)

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 455 an auxilliary dike will be required.

POTENTIAL SITE NC-0809

Location: On an unnamed tributary to Otter Brook about 1600 feet upstream from Doyle Road in Bernardston, Mass.

Bernardston, Mass. USGS quadrangle

Latitude: 42°39'32" Longitude: 72°31'26"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Greenhouse	375

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till) and fine sand and gravel at the toe of the slopes. Surficial deposits are terrace sand and gravel and granitic bedrock. Depth to bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be fair to good. Leakage is expected in the foundation and at the toe of both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 365 an auxilliary dike will be required.

POTENTIAL SITE NC-0810

Location: On Otter Brook about 3500 feet downstream from Ben Hale Road in Gill, Mass.

Bernardston, Mass. USGS quadrangle

Latitude: $42^{\circ}39'15''$ Longitude: $72^{\circ}30'40''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Gill Road	325
	Center Street	325
	Race track	322
	House and barns	322
	House and barns	312

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders, (glacial till) with gneiss bedrock outcropping at about elevation 340. Surficial deposits are glacial till and gneiss bedrock. Depth to gneiss bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE NC-0811

Location: On Fisher Brook about 900 feet upstream from South Mountain Road in Northfield, Mass.

Northfield, Mass. USGS quadrangle

Latitude: $42^{\circ}38'55''$ Longitude: $72^{\circ}26'27''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	South Mountain Road	780

Geologic Conditions: Both abutments are silty sand with gravel, cobbles and boulders (glacial till). Surficial deposits are glacial till and gneiss bedrock. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

POTENTIAL SITE NC-0811 (cont'd)

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 765, one dike will be required and two dikes if developed to elevation 815.

POTENTIAL SITE NC-0812

Location: On an unnamed tributary to Dry Brook about 1300 feet upstream from Main Road in Gill, Mass.

Bernardston, Mass. USGS quadrangle

Latitude: $42^{\circ}38'09''$ Longitude: $72^{\circ}30'36''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	400
	House and garage	400
	House and garage	388
	Main Road	385
	House and barn	385

Geologic Conditions: Both abutments are gneiss bedrock with a thin soil mantle. There are bedrock outcrops in the brook at the toe of the right abutment. Surficial deposits are gneiss bedrock and a thin mantle of sand and gravel. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: There is a topographic saddle just beyond the right abutment that should be considered for the excavated emergency spillway to about elevation 395. Should the site be developed to this elevation a dike would be required in this saddle. A topographic saddle on the right abutment should be considered for the excavated emergency spillway location. If the site is developed above elevation 395, a dike will be required across the saddle.

POTENTIAL SITE NC-0813

Location: On an unnamed tributary to the Connecticut River about 200 feet upstream from Barney Hale Road in Gill, Mass.

Greenfield, Mass. USGS quadrangle

Latitude: $42^{\circ}36'36''$ Longitude: $72^{\circ}30'24''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Barney Hill Road	385

Geologic Conditions: Both abutments are schist bedrock with a thin soil cover. Surficial deposits are swamp and schist bedrock. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. Excavation of the emergency spillway may be in shale. An investigation should be made of the shale to determine if it could be used as fill in the dam.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-NORTHERN CONNECTICUT VALLEY SUBWATERSHED PAUCHATTS BROOK									
BENEFICIAL POOL									
ELEV	STORAGE	COST/PER AC FT	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT	ELEV	AREA	DAM
(MSL)	AC FT	IN	(FT)	(MSL)	AC FT	(%)	(MSL)	(AC)	(MSL)
USGS QUAD-NORTHFIELD									
DA= 0.88 SQ MI = 563 AC									
STREAM WATER QUALITY (B)									
SITE RATING (1)	0	0.0	1.7	678.9	E	195	4.1	1540	682.0
666.7	0	0.0	1.7	678.9	E	195	4.1	1540	682.0
674.5	100	2.0	9.5	677.0	E	155	3.3	2100	681.8
682.7	279	5.9	17.7	685.2	E	357	7.6	1420	689.0
693.3	637	13.6	28.2	695.8	E	746	15.8	1030	699.0
701.5	994	21.2	36.5	704.0	E	1127	24.0	900	706.8
702.5	1045	22.2	37.5	705.0	E	1162	25.2	870	707.2
USGS QUAD-NORTHFIELD									
DA= 0.73 SQ MI = 467 AC									
STREAM WATER QUALITY (B)									
SITE RATING (1)	0	0.0	2.7	403.4 <td>E</td> <td>162</td> <td>4.1</td> <td>980</td> <td>406.2</td>	E	162	4.1	980	406.2
390.7	0	0.0	2.7	403.4	E	162	4.1	980	406.2
400.4	100	2.5	12.3	402.9	E	151	3.9	1120	405.4
403.6	160	4.1	15.6	406.1	E	218	5.6	910	409.6
409.0	279	7.1	21.0	411.5	E	351	9.0	730	414.5
412.5	376	9.7	24.5	415.0	E	464	11.8	630	417.5
USGS QUAD-NORTHFIELD									
DA= 3.17 SQ MI = 2029 AC									
STREAM WATER QUALITY (B)									
SITE RATING (1)	0	0.0	11.3	872.9 <td>E</td> <td>702</td> <td>4.1</td> <td>620</td> <td>877.0</td>	E	702	4.1	620	877.0
361.4	0	0.0	11.3	872.9	E	702	4.1	620	877.0
365.1	100	0.6	15.2	867.6	E	263	1.6	1450	873.5
373.5	736	4.4	23.0	876.0	E	1015	6.0	610	881.0
384.3	2009	11.8	34.3	886.8	E	2419	14.2	430	890.5
391.3	3282	19.4	41.8	894.3	E	3797	22.5	360	896.9
392.5	3419	20.2	42.5	895.0	E	3944	23.2	350	897.4

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE= C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, F= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS 0.4LY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

SUMMARY DATA FOR POTENTIAL CONCRETE RESERVOIR SITES

STUDY AREA-NORTHERN CORNFIELD VALLEY SUBWATER-SHED PAUCHARD, BROOK

BENEFICIAL POOL										*****																															
ELEV		STORAGE		COST/		DEPTH		CREST		STORAGE		COST		PER		AC FT		DESIGN		*****																					
(MSL)		AC FT		IN		(3)		(AC)		(AC)		(FT)		(MSL)		AC FT		IN		(4)		(4)		(4)		(4)		(MSL)		AREA		ELV		HGT		FILL		PERCENT		*****	
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****			
*****		*****		*****		*****		*****		*****		*****		*****		*****		*****		*****</																					

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-NORTHERN CONNECTICUT VALLEY SUBWATERSHED PAUCHAUG BROOK									
BENEFICIAL POOL									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * * * *									
* * *									

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DRUP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** UU NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

STUDY AREA-NORTHERN CONNECTICUT VALLEY SUBWATERSHED PAUCHAUG BROOK

BENEFICIAL POOL										EMERGENCY SPILLWAY										DESIGN HIGH WATER										DAM										SAFE YIELD									
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST SURF AC	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT	TYPE	(MSL)	AC FT	IN	AC FT	IN	(MSL)	AC	ELEV	TOP	HGT	FILL VOL	PERCENT CHANCE	AT 95																											
(MSL)	AC FT	IN	(AC)	(\$)	(FT)	(FT)	(MSL)	AC FT	(MSL)	AC FT	IN	(MSL)	AC	(MSL)	AC	(MSL)	ELEV	FT	CY	(1000)	(MGD)																												
DA= 0.92 SQ MI = 589 AC										USGS QUAD-NORTHFIELD										LATITUDE 42-38-55 LONGITUDE 72-26-27																													
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM										RUNOFF = 8.30 IN, PEAK FLOW = 285 CFS																													
SITE-NC-0811																																																	
SITE RATING (1)																																																	
763.5	0	0.0	3	4210	5.6	786.5	E	204	4.1	2290	789.0	20	792.0	34	104	***	***	***	***	***	***	***																											
779.5	100	2.0	10	42450	21.6	782.0	E	138	2.8	3040	784.5	15	787.5	30	73	0.18	0.18	0.18	0.18	0.18	0.18	0.18																											
791.2	288	5.9	23	29760	33.2	793.7	E	358	7.3	1920	796.0	31	799.0	41	166	0.36	0.36	0.36	0.36	0.36	0.36	0.36																											
802.8	663	13.5	40	25230	44.8	805.3	E	775	15.7	1320	807.7	45	810.7	53	309	0.58	0.58	0.58	0.58	0.58	0.58	0.58																											
811.0	1039	21.2	51	25270	53.0	813.5	E	1182	24.1	1080	816.0	64	819.0	61	443	0.72	0.72	0.72	0.72	0.72	0.72	0.72																											
812.5	1117	22.7	55	24140	54.5	815.0	E	1264	25.7	1040	817.3	68	820.0	62	467	0.73	0.73	0.73	0.73	0.73	0.73	0.73																											
DA= 0.99 SQ MI = 634 AC										USGS QUAD-BERNARDSTON										LATITUDE 42-38-09 LONGITUDE 72-30-36																													
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM										RUNOFF = 8.30 IN, PEAK FLOW = 306 CFS																													
SITE-NC-0812																																																	
SITE RATING (1)																																																	
373.5	0	0.0	4	2280	3.5	387.9	E	219	4.1	1060	390.2	32	393.6	24	19	***	***	***	***	***	***	***																											
383.1	100	1.9	18	12470	13.1	385.6	E	159	3.0	1430	388.1	28	391.1	21	14	0.18	0.18	0.18	0.18	0.18	0.18	0.18																											
389.1	244	4.6	30	11110	19.1	391.6	E	335	6.3	1000	394.0	40	397.0	27	28	0.33	0.33	0.33	0.33	0.33	0.33	0.33																											
396.7	533	10.1	45	12010	26.7	399.2	E	659	12.5	820	401.6	54	404.6	35	58	0.53	0.53	0.53	0.53	0.53	0.53	0.53																											
402.4	821	15.5	55	13540	32.4	404.9	E	969	18.4	760	407.1	61	410.0	40	89	0.68	0.68	0.68	0.68	0.68	0.68	0.68																											
402.5	824	15.6	55	13530	32.5	405.0	E	973	18.4	760	407.1	61	410.0	40	89	0.68	0.68	0.68	0.68	0.68	0.68	0.68																											
DA= 0.52 SQ MI = 333 AC										USGS QUAD-GREENFIELD										LATITUDE 42-36-36 LONGITUDE 72-30-24																													
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM										RUNOFF = 8.30 IN, PEAK FLOW = 161 CFS																													
SITE-NC-0813																																																	
SITE RATING (1)																																																	
373.9	0	0.0	3	1300	1.9	383.7	E	115	4.1	820	386.2	20	389.2	17	8	***	***	***	***	***	***	***																											
383.2	100	3.5	17	7650	11.2	385.7	E	150	5.4	870	388.1	22	391.1	19	10	0.15	0.15	0.15	0.15	0.15	0.15	0.15																											
385.6	145	5.1	19	7790	13.6	388.1	E	201	7.3	750	390.6	24	393.6	22	13	0.18	0.18	0.18	0.18	0.18	0.18	0.18																											
389.9	236	8.5	24	8110	17.9	392.4	E	303	10.8	630	394.7	29	397.7	26	20	0.26	0.26	0.26	0.26	0.26	0.26	0.26																											
392.5	303	10.8	26	8300	20.5	395.0	E	376	13.6	580	397.2	31	400.0	28	26	0.29	0.29	0.29	0.29	0.29	0.29	0.29																											

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

EXISTING SITE NC-0804 (Sawyer Ponds)

Location: On Bennett Brook at State Route 142 in Northfield, Mass.

Northfield, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
332	20	15	<u>(Acres)</u>	<u>(Sq. Mi.)</u>
			2,200	3.44

Potential for Expansion: Please refer to Site Data and Design Summary Table for Potential Site NC-0804 for details.

Remarks: The dam is an earthfill structure with a concrete core. The spillway is a 3-foot by 5-foot concrete box weir which outlets through a 5-foot by 5-foot concrete conduit with a gate. The upstream slope is covered with dense trees and brush. The downstream slope has scattered trees.

Ownership and Use: The pond is privately owned and is used for recreation.

EXISTING SITE NC-0808 (Stevens Swamp Pond)

Location: On an unnamed tributary to Mill Brook about 100 feet upstream from Chestnut Hill Road in Warwick, Mass.

Northfield, Mass. USGS quadrangle

<u>Surface Elevation:</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
950	105	10	<u>(Acres)</u>	<u>(Sq. Mi.)</u>
			450	0.70

Potential for Expansion: The small drainage area limits potential.

Remarks: The dam is a combination earth-and rock fill structure about 250 feet long. The spillway is a 6-foot wide chute. Both the upstream and downstream slopes are covered with dense trees and brush. There is evidence of seepage on the left abutment.

Ownership and Use: The pond is privately owned and is used for recreation.

EXISTING SITE NC-0820 (Seminary Reservoir)

Location: On Louisiana Brook about 2,900 feet upstream from Winchester Road in Northfield, Mass.

Northfield, Mass. USGS quadrangle

Surface Elevation:	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>686</u>	<u>5</u>	<u>15</u>	<u>400 0.63</u>

Potential for Expansion: The small drainage area limits potential. Steep topography limits any significant increase in surface area.

Remarks: The dam is an earthfill structure about 120 feet long. The upstream slope is riprapped below the normal water level. The downstream slope is vegetated and well maintained. The spillway is a 45 foot wide concrete chute located on the left abutment. The spillway has provision for flashboards to raise the water level 1.5 feet.

Ownership and Use: The reservoir is owned by the Mt. Hermon School in Northfield and used for water supply.

EXISTING SITE NC-0821 (Wanamaker Lake)

Location: On Pauchaug Brook at State Route 63 in Northfield, Mass.

Northfield, Mass. USGS quadrangle

Surface Elevation:	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>198 (est.)</u>	<u>2</u>	<u>6</u>	<u>4,350 6.80</u>

Potential for Expansion: Steep topography limits any significant increase in surface area.

Remarks: The dam is an earthfill structure with a concrete-block wier located near the center. The spillway weir is 30 feet wide and 2 feet deep. There are provisions for flashboards to raise the water level. The spillway outlets into a rock-lined channel under Route 63.

Ownership and Use: The lake is owned by Mt. Hermon School in Northfield and has no specific use at the present time.



NC-0804
Sawyers Pond



NC-0821
Wanamaken Lake



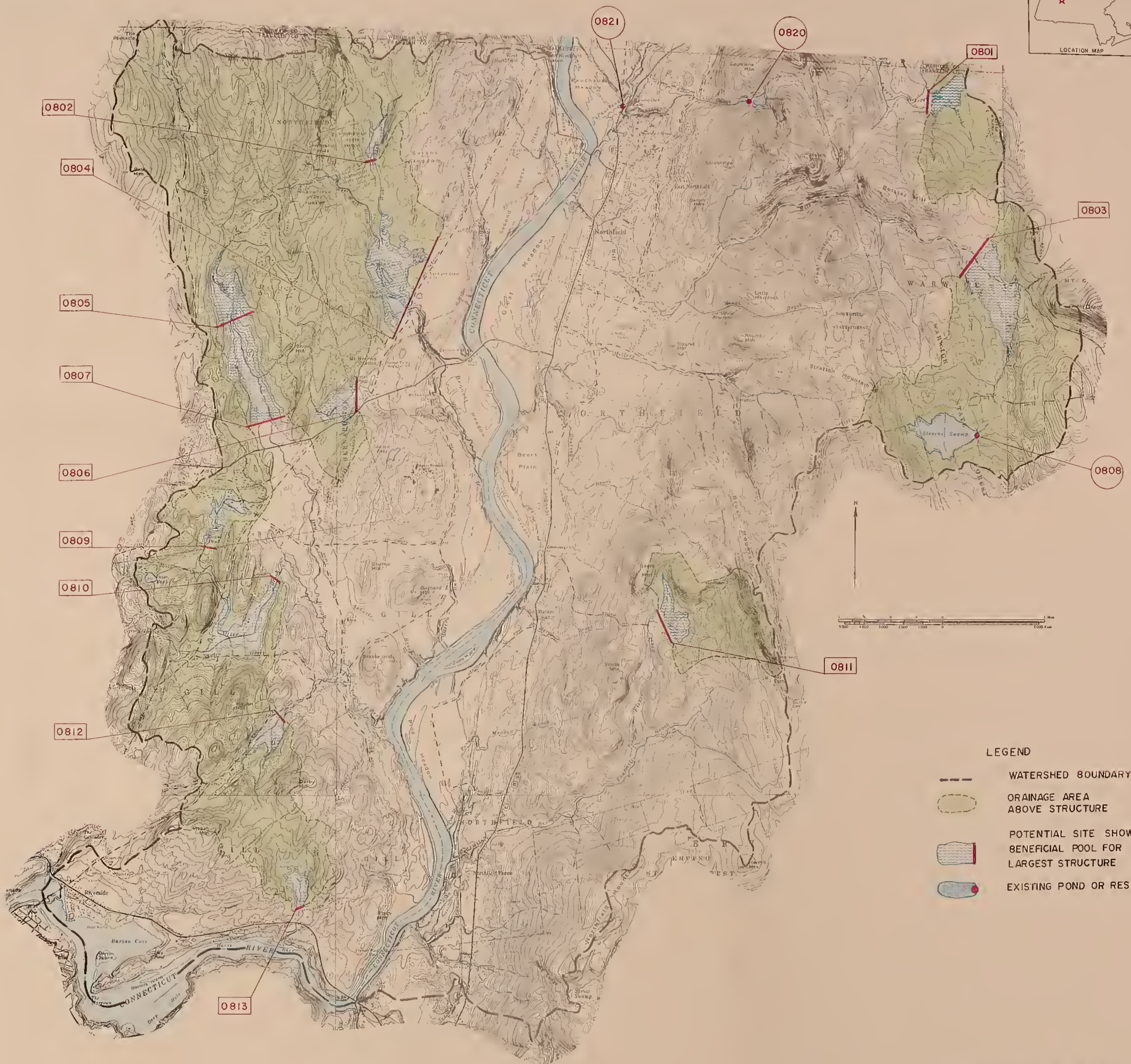
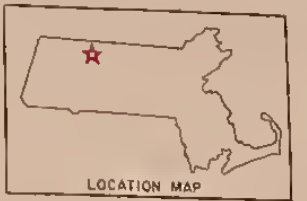
NC-0808
Stevens Swamp



NC-0820
Seminary Reservoir

EXISTING RESERVOIRS
SUBWATERSHED NC-08
PAUCHAUG BROOK





PAUCHAUG BROOK (NC-08)
NORTHERN CONNECTICUT VALLEY STUDY AREA
MASSACHUSETTS
EXISTING AND POTENTIAL RESERVOIR SITES
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

NORTHERN CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed NC-09, Falls River

The Massachusetts portion of the Falls River subwatershed covers about 15,000 acres in Bernardston, Gill, Greenfield, and Leyden; all in Franklin County.

The major stream is the Falls River which originates in Guilford, Vermont and flows southerly through Bernardston to the Connecticut River on the Greenfield-Gill town line.

Geology of the potential reservoir sites is characterized by thin glacial till or glacial outwash underlain by schist bedrock.

Six potential reservoir sites were studied. There were no existing sites that met study criteria.

POTENTIAL SITE NC-0901

Location: On Beaver Meadow Brook about 700 feet downstream from Alexander Road in Leyden, Mass.

Colrain, Mass. USGS quadrangle

Latitude: 42°43'34" Longitude: 72°37'59"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Cottage	940
	Alexander Road	910

Geologic Conditions: Both abutments are outwash sand and gravel at the toe with silty sand, (glacial till) above elevation 900. The sand and gravel may be thin. Exposed rock in the streambed may be schist bedrock or large boulders. Surficial deposits are outwash sand and gravel, glacial till, and schist bedrock. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE NC-0902

Location: On Beaver Meadow Brook about 1100 feet upstream from Greenfield Road in Leyden, Mass.

Bernardston, Mass. USGS quadrangle

Latitude: $42^{\circ}43'15''$ Longitude: $72^{\circ}37'28''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Alexander Road	815

Geologic Conditions: Both abutments are schist with a thin soil mantle, and glacial till high on the left abutment. There is bedrock outcropping in the stream. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE NC-0903

Location: On Beaver Meadow Brook about 1,300 feet upstream from East Hill Road in Leyden, Mass.

Bernardston, Mass. USGS quadrangle

Latitude: $42^{\circ}43'16''$ Longitude: $72^{\circ}36'48''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Trailer house	770
	Cemetery	760
	Barn	760
	Barn and garage	760
	House	752
	House and barn	750
	Barn	750
	Flower shop	748
	High tension lines	740
	Brattleboro Road	737

Geologic Conditions: Both abutments are schist bedrock with a thin soil mantle. There is rock outcropping at the centerline. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

POTENTIAL SITE NC-0903 (cont'd)

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE NC-0904

Location: On Couch Brook about 3600 feet upstream from U.S. Route 5 in Bernardston, Mass.

Bernardston, Mass. USGS quadrangle

Latitude: $42^{\circ}42'03''$ Longitude: $72^{\circ}34'36''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Haigis Road	640
	Telephone cable	640
	House and barns	640
	Cottage	610

Geologic Conditions: Both abutments are schist bedrock with a thin soil cover and a thin sand and gravel bar at the toe of each slope. Surficial deposits are schist bedrock and sand and gravel. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE NC-0905

Location: On an unnamed tributary to Falls River about 6,300 feet upstream from Route 91 in Bernardston, Mass.

Bernardston, Mass. USGS quadrangle

Latitude: 42°42'57" Longitude: 72°33'08"

Facilities Affected: None below elevation 760.

Geologic Conditions: Both abutments and the surficial deposits are thin englacial drift underlain by schist bedrock. There is schist bedrock outcropping in the streambed. Waterholding capabilities appear to be good. Borrow material for dam construction was not located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE NC-0906

Location: On Falls River about 3,500 feet upstream from Factory Hollow Road in Gill and Greenfield, Mass.

Bernardston, Mass. USGS quadrangle

Latitude: 42°37'35" Longitude: 72°33'04"

Facilities Affected:	Facility	Elevation
	House and barn	258
	House and barn	255
	Bascom Road	250
	House foundation	235
	15 Boy Scout buildings	230

Geologic Conditions: Both abutments and the surficial deposits are Arkosic sandstone and conglomerate with a thin soil mantle. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-NORTHERN CONNECTICUT VALLEY										SUBWATERSHED FALLS RIVER									
BENEFICIAL POOL										DESIGN HIGH WATER									
EMERGENCY SPILLWAY										DAM									
COST PER AC FT										TOP ELEV									
COST SURF AC (\$)										ELEV AREA									
DEPTH AT DAM (FT)										(MSL) (AC) (MSL) FT									
CREST ELEV										STORAGE AT CREST									
STORAGE										PER AC FT									
ELEV										HGT VOL (1000 CY)									
(MSL) AC FT IN										(MSL) (AC) (MSL) FT									
DA= 0.61 SQ MI = 390 AC										LATITUDE 72-37-59 LONGITUDE 42-43-34									
STREAM WATER QUALITY (B)										RUNOFF = 8.40 IN, PEAK FLOW = 191 CFS									
SITE RATING (1)										* 42 *									
887.0	0	0.0	1	2640	7.1	911.1	E	135	4.1	1810	913.5	14	917.0	37	42	***			
908.5	100	3.0	10	26200	28.5	911.0	E	133	4.1	1990	913.4	14	916.4	36	40	0.16			
917.4	219	6.6	17	22220	37.4	919.9	E	268	8.2	1420	922.3	20	925.3	45	71	0.26			
928.9	457	14.0	23	23910	48.9	931.4	E	524	16.1	1070	933.8	27	936.8	57	134	0.40			
937.8	694	21.2	30	24010	57.8	940.3	E	778	23.9	940	942.5	34	945.6	66	198	0.48			
941.5	813	25.0	33	24360	61.5	944.0	E	902	27.7	900	946.5	37	949.5	70	233	0.50			
DA= 1.14 SQ MI = 730 AC										LATITUDE 72-37-28 LONGITUDE 42-43-15									
STREAM WATER QUALITY (B)										RUNOFF = 8.40 IN, PEAK FLOW = 357 CFS									
SITE RATING (1)										* 41 *									
791.5	0	0.0	2	2530	6.6	814.0	E	252	4.1	980	816.4	26	819.5	35	41	***			
806.5	100	1.6	15	17430	21.5	813.0	E	232	3.8	1090	815.5	25	818.5	33	36	0.21			
817.7	337	5.5	28	15430	32.7	820.1	E	418	6.8	1020	822.5	32	825.5	41	72	0.42			
831.6	810	13.2	39	19100	46.7	834.1	E	917	15.1	800	836.5	41	839.5	55	187	0.72			
843.0	1283	21.1	46	22200	58.0	845.5	E	1411	23.2	720	848.0	50	851.0	66	327	0.88			
847.9	1520	25.0	50	22840	62.9	850.4	E	1658	27.2	690	852.9	55	855.9	71	401	0.93			
DA= 2.13 SQ MI = 1363 AC										LATITUDE 72-36-48 LONGITUDE 42-43-16									
STREAM WATER QUALITY (B)										RUNOFF = 8.40 IN, PEAK FLOW = 667 CFS									
SITE RATING (1)										* 35 *									
725.3	0	0.0	4	3190	10.3	744.7	E	471	4.1	830	749.0	66	754.0	39	35	***			
735.0	100	0.8	21	14890	20.0	737.5	E	179	1.6	1780	744.7	52	749.5	35	25	0.27			
746.5	557	4.9	58	9910	31.5	749.0	E	729	6.4	790	754.4	78	759.2	44	49	0.74			
759.0	1470	12.8	85	14040	44.0	761.5	E	1709	15.0	700	765.9	102	770.2	55	93	1.32			
768.5	2383	21.0	790	17400	53.5	771.0	E	2681	23.6	700	774.5	124	778.7	64	141	1.66			
772.4	2840	25.0	118	18340	57.4	774.9	E	3156	27.7	690	778.2	132	782.0	67	164	1.74			

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

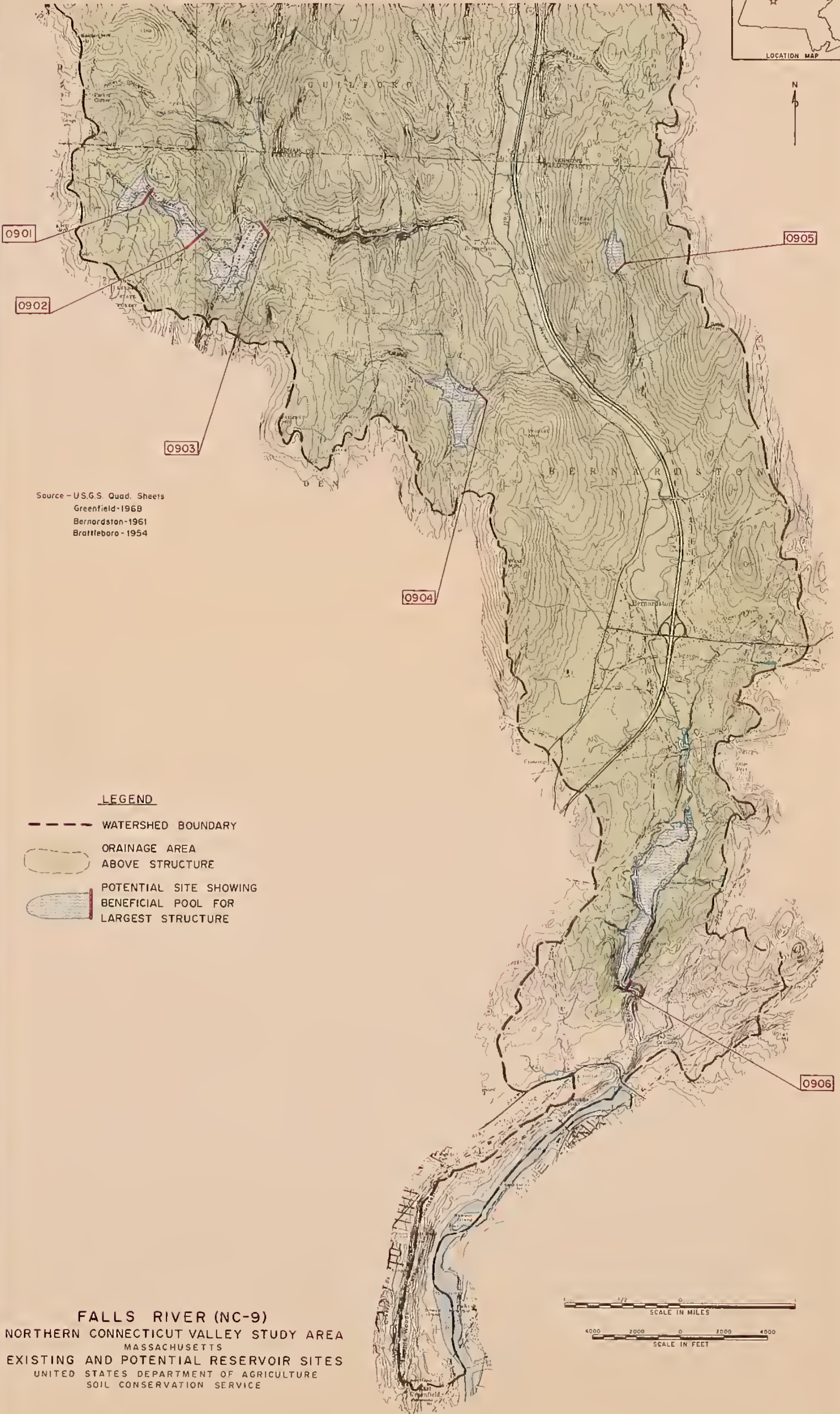
STUDY AREA-NORTHERN CONNECTICUT VALLEY SUBWATERSHED FALLS RIVER														
BENEFICIAL POOL					EMERGENCY SPILLWAY									
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST/ SURF AC	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER					
(MSL)	AC FT IN	(\$)	(AC)	(\$)	(FT)	(MSL)	AC FT IN	(\$)	(MSL)					
577.0	0	0.0	3	17.1	613.2	E	509	4.1	618.5					
592.5	100	0.8	10	32.5	595.0	E	145	1.2	601.7					
616.5	594	4.8	36	56.5	619.0	E	709	5.8	625.0					
635.7	1583	12.8	65	75.0	638.2	F	1759	14.2	643.0					
652.5	2879	23.5	90	92.5	652.5	T	2898	23.6	657.7					
DA= 2.30 SQ MI = 1472 AC					USGS QUAD-BERNARDSTON					LATITUDE 72-34-36 LONGITUDE 42-42-03				
STREAM WATER QUALITY (B)					100-YR PRIN SPWY DESIGN STORM					RU-OFF = 8.40 IN, PEAK FLOW = 720 CFS				
SITE-NC-0904					100-YR PRIN SPWY DESIGN STORM					LATITUDE 72-34-36 LONGITUDE 42-42-03				
SITE RATING (1)					100-YR PRIN SPWY DESIGN STORM					LATITUDE 72-34-36 LONGITUDE 42-42-03				
577.0	0	0.0	3	17.1	613.2	E	509	4.1	618.5	39	625.5	65	200	
592.5	100	0.8	10	32.5	595.0	E	145	1.2	601.7	16	606.3	46	83	
616.5	594	4.8	36	56.5	619.0	E	709	5.8	625.0	49	629.9	70	245	
635.7	1583	12.8	65	75.0	638.2	F	1759	14.2	643.0	76	648.0	88	445	
652.5	2879	23.5	90	92.5	652.5	T	2898	23.6	657.7	97	660.0	100	620	
DA= 2.30 SQ MI = 1472 AC					USGS QUAD-BERNARDSTON					LATITUDE 72-34-36 LONGITUDE 42-42-03				
STREAM WATER QUALITY (B)					100-YR PRIN SPWY DESIGN STORM					LATITUDE 72-34-36 LONGITUDE 42-42-03				
SITE-NC-0904					100-YR PRIN SPWY DESIGN STORM					LATITUDE 72-34-36 LONGITUDE 42-42-03				
SITE RATING (1)					100-YR PRIN SPWY DESIGN STORM					LATITUDE 72-34-36 LONGITUDE 42-42-03				
577.0	0	0.0	3	17.1	613.2	E	509	4.1	618.5	39	625.5	65	200	
592.5	100	0.8	10	32.5	595.0	E	145	1.2	601.7	16	606.3	46	83	
616.5	594	4.8	36	56.5	619.0	E	709	5.8	625.0	49	629.9	70	245	
635.7	1583	12.8	65	75.0	638.2	F	1759	14.2	643.0	76	648.0	88	445	
652.5	2879	23.5	90	92.5	652.5	T	2898	23.6	657.7	97	660.0	100	620	

[illegible]

220.6	100	0.1	5700	36	16C40	25.6	*	223.1	E	464	0.3	1230	*	225.7	48	*	230.5	35	24	1.29
236.3	984	0.6	780	79	979C	41.4	*	238.8	E	1454	0.8	530	*	241.7	101	*	246.6	52	58	3.23
251.6	2753	1.6	390	161	662C	56.5	*	254.1	E	3434	1.9	310	*	257.5	198	*	262.6	68	112	5.78
256.7	3637	2.0	320	193	601C	61.6	*	259.2	E	4405	2.5	260	*	262.6	219	*	267.7	73	135	6.80
							*						*			*				*
							*						*			*				*

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, F= TWO SPILLWAYS, N= NONE
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

*** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. ***



Source - U.S.G.S. Quad. Sheets
Greenfield-1968
Bernardston-1961
Brattleboro - 1954

LEGEND

- WATERSHED BOUNDARY
- ORAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE

FALLS RIVER (NC-9)
NORTHERN CONNECTICUT VALLEY STUDY AREA
MASSACHUSETTS
EXISTING AND POTENTIAL RESERVOIR SITES
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE



CENTRAL CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed CV-17, Russellville Brook

The Russellville Brook subwatershed covers about 33,500 acres in Deerfield, Leverett, Montague, Sunderland, and Whately in Franklin County; and Hadley and Hatfield in Hampshire County.

The major stream is the portion of the Connecticut River from the confluence with the Millers River downstream to Hatfield.

Geology of the potential reservoir sites is characterized by outwash sand and gravel underlain by basalt or conglomerate bedrock.

Four potential reservoir sites and four existing reservoirs were studied.

POTENTIAL SITE CV-1701

Location: On Pole Swamp Brook about 1,400 feet upstream from River Road in Deerfield, Mass.

Greenfield, Mass. USGS Quadrangle

Latitude: $42^{\circ}32'22''$ Longitude: $72^{\circ}34'26''$

Facilities Affected: None below elevation 228.

Geologic Conditions: Both abutments are thin outwash sands or gravel underlain by lacustrine deposits on glacial till at about 20 feet. Surficial deposits are outwash sand and gravel and basalt bedrock. Depth to basalt bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be fair to good. Slight leakage is expected near the top of both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-1702

Location: On an unnamed tributary to the Connecticut River about 500 feet upstream from Pine Nook Road in Deerfield, Mass.

Greenfield, Mass. USGS quadrangle

Latitude: $42^{\circ}31'30''$ Longitude: $72^{\circ}34'50''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	3 silos and 5 dairy farm buildings on centerline of dam	
	House	482

POTENTIAL SITE CV-1702 (cont'd.)

Geologic Conditions: The right abutment is outwash sand and gravel. The left abutment is conglomerate or basalt bedrock at the higher elevations and gravel at the lower elevations. Surficial deposits are outwash sand and gravel and bedrock. Depth to basalt bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be fair. Leakage is expected through the right abutment and possibly through the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. There is a small dam located at this site.

POTENTIAL SITE CV-1703

Location: On Clapp Brook about 3,000 feet upstream from River Road in Deerfield, Mass.

Greenfield, Mass. USGS quadrangle

Latitude: $42^{\circ}30'12''$ Longitude: $72^{\circ}34'45''$

Facilities Affected: None below elevation 357.

Geologic Conditions: Both of the abutments are thin silty sand with gravel, cobbles, and boulders (glacial till) and shallow to triassic conglomerate or basalt. Surficial deposits are glacial till and bedrock. Depth to conglomerate or basalt bedrock is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. See Existing Site CV-1703 for data on the existing dam and reservoir at this site.

POTENTIAL SITE CV-1704

Location: On Cranberry Pond Brook about 300 feet upstream from Taylor Hill Road in Montague, Mass.

Greenfield, Mass. USGS quadrangle

Latitude: $42^{\circ}30'56''$ Longitude: $72^{\circ}32'47''$

Facilities Affected:	Facility	Elevation
	2 barns	278
	2 houses	275
	Taylor Road and utilities	240

Geologic Conditions: The right abutment is thin outwash sand and gravel; shallow to bedrock. The left abutment is triassic conglomerate bedrock. Surficial deposits are swamp, outwash sand and gravel, and bedrock. Depth to bedrock in the foundation is estimated to be less than 5 feet. Waterholding capabilities appear to be fair. Slight leakage is expected through the right abutment. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED RUSSELLVILLE BROOK									
BENEFICIAL POOL																			
ELEV	STORAGE	PER AC FT	AREA (AC)	COST SURF AC (\$)	DEPTH AT DAM (FT)	CREST ELEV	STORAGE AT CREST	COST PER AC FT (\$)	DESIGN HIGH WATER	DAM	SAFE YIELD	PERCENT CHANCE	FILL VOL (1000 CY)	HGT VOL	TOP ELEV	AREA ELEV	DESIGN HIGH WATER	DAM	SAFE YIELD
(MSL)	AC FT IN	(\$)	(AC)	(AC)	(FT)	(MSL)	AC FT IN	(AC)	(MSL)	(AC)	(MSL)	(AC)	(MSL)	(AC)	(MSL)	(AC)	(MSL)	(AC)	(MSL)
SITE-CV-1701										SITE-CV-1702									
DA= 0.77 SQ MI = 493 AC										DA= 0.58 SQ MI = 371 AC									
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM										STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM									
LATITUDE 42-32-22										LATITUDE 42-31-30									
RUNOFF = 8.20 IN, PEAK FLOW = 235 CFS										RUNOFF = 8.20 IN, PEAK FLOW = 177 CFS									
161.8	0	0.0	2	33140	7.8	186.8	E 170	4.1	1780	189.2	15	192.8	39	53	189.2	15	192.8	39	53
181.2	100	2.4	3030	9	27.2	183.7	E 130	3.2	2320	186.1	13	189.1	35	42	186.1	13	189.1	35	42
192.7	254	6.1	1760	17	38.7	195.2	E 304	7.3	1470	197.6	20	200.6	47	79	197.6	20	200.6	47	79
207.0	563	13.7	1150	26	53.0	209.5	E 636	15.5	1020	211.7	28	214.7	61	144	211.7	28	214.7	61	144
218.0	872	21.2	950	30	64.0	220.5	E 955	23.2	870	222.7	34	225.7	72	215	222.7	34	225.7	72	215
222.7	1027	25.0	910	34	68.6	225.2	E 1119	27.2	840	227.6	42	230.7	77	257	227.6	42	230.7	77	257
SITE-CV-1703										SITE-CV-1704									
DA= 0.74 SQ MI = 474 AC										DA= 0.74 SQ MI = 474 AC									
STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM										STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM									
LATITUDE 42-30-12										LATITUDE 42-30-12									
RUNOFF = 8.20 IN, PEAK FLOW = 226 CFS										RUNOFF = 8.20 IN, PEAK FLOW = 226 CFS									
316.9	0	0.0	2	24180	4.9	334.2	E 164	4.1	1730	336.7	21	340.7	29	41	336.7	21	340.7	29	41
330.6	100	2.5	3290	14	18.6	333.1	E 144	3.5	2290	336.7	22	340.9	29	42	336.7	22	340.9	29	42
337.4	224	5.6	1970	22	25.4	339.9	E 289	7.3	1530	342.9	30	346.7	35	66	342.9	30	346.7	35	66
346.1	472	11.8	1290	35	34.0	348.6	E 570	14.5	1070	351.0	43	354.1	42	110	351.0	43	354.1	42	110
352.2	719	18.2	1060	44	40.3	354.7	E 838	21.2	910	356.9	50	359.9	48	158	356.9	50	359.9	48	158
352.5	729	18.5	1040	45	40.5	355.0	E 849	21.5	900	356.9	50	359.9	48	158	356.9	50	359.9	48	158

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

STUDY AREA-CENTRAL CONNECTICUT VALLEY SUBWATERSHED RUSSELLVILLE BROOK

[illegible]

 NOTES - (1) CCSTS ARE BASED ON 1972 S-C-S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE CROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE
 CONSIDERED ACCURATE TO THAT DEGREE.
 ** DO NOT USE FOR FINAL SITE SELECTION OR LANC ACQUISITION. **

EXISTING SITE CV-1703 (Clapp Pond)

Location: On Clapp Brook about 3,000 feet upstream from River Road in Deerfield, Mass.

Greenfield, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
318	2	6	470 0.73

Potential for Expansion: Please refer to Site Data and Design Summary Table for Potential Site CV-1703 for details.

Remarks: The dam is an earthfill structure about 100 feet long. The spillway is a rock masonry weir about 12 feet wide and 1 foot deep. The masonry weir is crumbling in places.

Ownership and Use: The pond is owned by Edward Melnick and has no specific use at the present.

EXISTING SITE CV-1710 (Whitmore Pond)

Location: On an unnamed tributary to the Connecticut River about 200 feet upstream of Falls Road in Sunderland, Mass.

Greenfield, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
207	4	16	580 0.91

Potential for Expansion: Raising the existing water level about 20 feet would provide about 30 acres of water surface. An unpaved road would be affected.

Remarks: The dam is a rock masonry structure with a 20-foot wide concrete drop spillway in the center. A wooden catwalk crosses the spillway.

Ownership and Use: The pond is owned by Mrs. Phillip F. Whitmore and is used primarily for recreation.

EXISTING SITE CV-1711 (Chard Pond)

Location: On Gunn Brook at Falls Road in Sunderland, Mass.

Mt. Toby, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>145</u>	<u>4</u>	<u>12</u>	<u>1,350 2.11</u>

Potential for Expansion: Steep topography limits any significant increase in surface area or storage.

Remarks: The dam is part of the Meadow Road highway embankment and is about 300 feet long with a 15-foot top width. The principal spillway is an 18-foot wide stone masonry weir structure having a depth of 1 foot. Adjacent to and about 1 foot above the principal spillway is an 18-foot wide stone masonry emergency spillway. The concrete in the emergency spillway is deteriorated.

Ownership and Use: The pond is owned by the Amherst Angler's Club and is used primarily for recreation.

EXISTING SITE CV-1712 (Cranberry Pond)

Location: On Cranberry Pond Brook about 7,000 feet upstream from State Route 47 in Sunderland, Mass.

Greenfield, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>352</u>	<u>25</u>	<u>5</u>	<u>1,550 2.42</u>

Potential for Expansion: Steep topography limits any significant increase in surface area or storage.

Remarks: The dam is an earthfill structure about 100 feet long with a 20-foot top width. The principal spillway is a stone drop structure, 20 feet wide with 1 foot of wooden flashboards. The dam slopes are heavily brushed and the spillway weir is clogged with debris.

Ownership and Use: The pond is owned by the Commonwealth of Massachusetts and is used for recreation and as a study area for the University of Massachusetts.



CV-1703
Clapp Pond



CV-1711
Chard Pond



CV-1710
Whitmore Pond



CV-1712
Cranberry Pond





LEGEND

- SUBWATERSHED BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- EXISTING RESERVOIR OR POND



RUSSELLVILLE BROOK (CV-17)
CENTRAL CONNECTICUT VALLEY STUDY AREA
MASSACHUSETTS
EXISTING AND POTENTIAL RESERVOIR SITES
UNITED STATES DEPARTMENT OF AGRICULTURE
CONSERVATION SERVICE

CENTRAL CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed CV-18, Sawmill River

The Sawmill River subwatershed covers about 20,300 acres in Leverett, Montague, Shutesbury, and Wendell; all in Franklin County.

The major stream is the Sawmill River which originates in Leverett and flows northwesterly through Montague to the Connecticut River.

Geology of the potential reservoir sites is characterized by sand and gravel and glacial till underlain by schist bedrock.

Eight potential reservoir sites and seven existing reservoirs were studied.

POTENTIAL SITE CV-1802

Location: On an unnamed tributary to Plympton Brook about 3,800 feet upstream from Locks Village Road in Wendell, Mass.

Millers Falls, Mass. USGS quadrangle

Latitude: $42^{\circ}31'46''$ Longitude: $72^{\circ}25'26''$

Facilities Affected: None below elevation 1015

Geologic Conditions: The right abutment is ice-contact sand and gravel at the toe with glacial till higher on the slope. The left abutment is glacial till. Surficial deposits are glacial till and sand and gravel. Depth to schist bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be fair to good. Slight leakage is expected through the right abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-1803

Location: On Plympton Brook about 100 feet downstream from Locks Village Road in Wendell, Mass.

Millers Falls, Mass. USGS quadrangle

Latitude: 42°31'23" Longitude: 72°25'02"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House and Cottage	930
	House and barn	920
	Locks Village Road and utilities	910

Geologic Conditions: Both abutments are thin sand and gravel at the toe underlain by schist bedrock or glacial till. Surficial deposits are outwash sand and gravel and schist bedrock. Depth to bedrock in the foundation is estimated to be 5 to 10 feet. Waterholding capabilities appear to be fair. Slight leakage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. See Existing Site CV-1803 for data on the existing dam and reservoir at this site.

POTENTIAL SITE CV-1804

Location: On Red Brook about 6,900 feet upstream from Lake View Road in Wendell, Mass.

Millers Falls, Mass. USGS quadrangle

Latitude: 42°31'20" Longitude: 72°26'45"

Facilities Affected: None below elevation 947

Geologic Conditions: Both abutments are thin englacial drift with cobbles and boulders. Surficial deposits are swamp and englacial drift. Depth to schist bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

This is substantially the same site as Site M5B-4 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970.

Public Ownership: A small area on the left abutment would be within the Wendell State Forest.

POTENTIAL SITE CV-1805

Location: On an unnamed tributary to the Sawmill River about 3,000 feet upstream from Chestnut Hill Road in Montague, Mass.

Greenfield, Mass. USGS quadrangle

Latitude: $42^{\circ}31'22''$ Longitude: $72^{\circ}30'15''$

Facilities: None below elevation 577
Affected:

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Surficial deposits are glacial till and bedrock. Depth to schist bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

This is substantially the same site as Site M5B-1 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970.

POTENTIAL SITE CV-1806

Location: On Spaulding Brook about 5,000 feet upstream from the confluence with Sawmill River in Montague, Mass.

Millers Falls, Mass. USGS quadrangle

Latitude: $42^{\circ}43'37''$ Longitude: $72^{\circ}28'55''$

Facilities	Facility	Elevation
Affected:	House and sheds	820
	Cemetery	810
	House	810
	Road and utilities	787
	House	787
	House	775
	House	765
	Utility poles	760
	Chestnut Hill Road	759
	Small building	725

Geologic Conditions: The right abutment is ice contact sand and gravel at the toe of the slope and glacial till high on the abutment. The left abutment is silty sand with gravel, cobbles, and boulders (glacial till). Surficial deposits are sand and gravel and glacial till. Depth to schist bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be fair. Leakage is expected through the right abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. A breached rock masonry and wood dam is at the site.

POTENTIAL SITE CV-1807

Location: On Plympton Brook about 300 feet downstream from Locks Village Road in Wendell, Mass.

Millers Falls, Mass. USGS quadrangle

Latitude: $42^{\circ}43'15''$ Longitude: $72^{\circ}25'38''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	House	875
	2 Houses and 1 shed	870
	Cabin	865
	Jennison Road	860
	House	855
	Lock Village Rd. and utilities	850
	West Road and utilities	850

Geologic Conditions: Both abutments are outwash sand and gravel with bedrock outcrops on the right abutment. Surficial deposits are outwash sand and gravel and bedrock. Depth to schist bedrock in the foundation is estimated to be between 10 to 15 feet. Waterholding capabilities appear to be fair. Leakage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. See Existing Site CV-1807 for data on the existing dam and reservoir at this site.

POTENTIAL SITE CV-1808

Location: On Williams Brook about 3,700 feet upstream from North Leverett Road in Leverett, Mass.

Millers Falls, Mass. USGS quadrangle

Latitude: $42^{\circ}43'09''$ Longitude: $72^{\circ}28'26''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Light duty road	839
	Dirt road	829
	High tension line	826

Geologic Conditions: Both the abutments are thin discontinuous silty sand shallow to schist bedrock. Surficial deposits are swamp, glacial till, and schist bedrock. Depth to schist bedrock in the foundation is estimated to be less than 5 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 835, an auxilliary dike will be required.

POTENTIAL SITE CV-1810

Location: On an unnamed tributary to the Sawmill River about 100 feet upstream from Dudleyville Road in Shutesbury, Mass.

Shutesbury, Mass. USGS quadrangle

Latitude: $42^{\circ}29'06''$ Longitude: $72^{\circ}26'42''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Shed	965
	Montague Road	960
	Small building	960
	3 Houses	960

Geologic Conditions: Both abutments are outwash sand and gravel at the toe with glacial till higher on the abutments. Surficial deposits are outwash sand and gravel and glacial till. Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be fair. Leakage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location. There is a rock-rubble and earth dam at the site.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY SUBWATERSHED SAWMILL RIVER

BENEFICIAL PCOL

*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			
*****																*****				*****				*****				*****				*****			

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED SAWMILL RIVER									
BENEFICIAL POOL																			
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST SURF AC (\$)	DEPTH AT DAM (FT)	CREST ELEV	STORAGE AT CREST	CCST PER AC FT	DESIGN HIGH WATER	DAM	SAFE YIELD	AT 95	FILL VOL (1000 CY)	PERCENT CHANCE	DESIGN HIGH WATER	DAM	SAFE YIELD	AT 95	FILL VOL (1000 CY)
(MSL)	AC FT	IN																	
DA= 1.36 SQ MI = 870 AC										USGS QUAD-GREENFIELD									
SITE-CV-1805										100-YR PRIN SPWY DESIGN STORM									
SITE RATING (1)										LATITUDE 42-31-22 LONGITUDE 72-30-15									
516.0										RUNOFF = 8.20 IN, PEAK FLOW = 416 CFS									
516.0	0	0.0	3	20810	6.0	537.4	E	301	4.1	1040	541.0	32	546.0	36	43	3	0.25	0.25	0.25
528.0	100	1.4	14	20810	18.1	530.5	E	151	2.0	1990	536.8	27	541.0	31	29	3	0.25	0.25	0.25
548.0	386	5.3	32	15150	30.5	543.0	E	481	6.6	1000	548.0	39	552.4	42	67	3	0.59	0.59	0.59
555.2	957	13.2	45	16370	45.2	557.7	E	1080	14.8	680	562.0	51	566.0	56	143	3	0.98	0.98	0.98
566.5	1528	21.1	57	17160	56.5	569.0	E	1683	23.2	580	572.5	63	576.3	66	229	3	1.19	1.19	1.19
571.3	1813	25.0	62	17600	61.3	573.8	E	1982	27.2	550	577.2	65	580.9	71	278	3	1.24	1.24	1.24
SITE-CV-1806										USGS QUAD-MILLERS FALLS									
SITE RATING (2)										LATITUDE 42-43-37 LONGITUDE 72-28-55									
516.0										RUNOFF = 8.20 IN, PEAK FLOW = 489 CFS									
516.0	0	0.0	3	20810	6.0	537.4	E	301	4.1	1040	541.0	32	546.0	36	43	3	0.25	0.25	0.25
528.0	100	1.4	14	20810	18.1	530.5	E	151	2.0	1990	536.8	27	541.0	31	29	3	0.25	0.25	0.25
548.0	386	5.3	32	15150	30.5	543.0	E	481	6.6	1000	548.0	39	552.4	42	67	3	0.59	0.59	0.59
555.2	957	13.2	45	16370	45.2	557.7	E	1080	14.8	680	562.0	51	566.0	56	143	3	0.98	0.98	0.98
566.5	1528	21.1	57	17160	56.5	569.0	E	1683	23.2	580	572.5	63	576.3	66	229	3	1.19	1.19	1.19
571.3	1813	25.0	62	17600	61.3	573.8	E	1982	27.2	550	577.2	65	580.9	71	278	3	1.24	1.24	1.24
SITE-CV-1807										USGS QUAD-MILLERS FALLS									
SITE RATING (2)										LATITUDE 42-43-15 LONGITUDE 72-25-38									
516.0										RUNOFF = 8.20 IN, PEAK FLOW = 88 CFS									
516.0	0	0.0	3	20810	6.0	537.4	E	301	4.1	1040	541.0	32	546.0	36	43	3	0.25	0.25	0.25
528.0	100	1.4	14	20810	18.1	530.5	E	151	2.0	1990	536.8	27	541.0	31	29	3	0.25	0.25	0.25
548.0	386	5.3	32	15150	30.5	543.0	E	481	6.6	1000	548.0	39	552.4	42	67	3	0.59	0.59	0.59
555.2	957	13.2	45	16370	45.2	557.7	E	1080	14.8	680	562.0	51	566.0	56	143	3	0.98	0.98	0.98
566.5	1528	21.1	57	17160	56.5	569.0	E	1683	23.2	580	572.5	63	576.3	66	229	3	1.19	1.19	1.19
571.3	1813	25.0	62	17600	61.3	573.8	E	1982	27.2	550	577.2	65	580.9	71	278	3	1.24	1.24	1.24

NOTES - (1) CCSTs ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED SAWMILL RIVER									
BENEFICIAL POOL										EMERGENCY SPILLWAY									
										DESIGN HIGH WATER									
ELEV	STORAGE	PER AC FT	AREA (AC)	COST/ SURF AC (\$)	DEPTH AT DAM (FT)	CREST ELEV	STORAGE AT CREST	CCST PER AC FT	TOP ELEV	AREA (AC)	ELEV (MSL)	AREA (AC)	ELEV (MSL)	FT	HGT VOL (1000 CY)	FILL PERCENT	CHANCE	YIELD AT 95	SAFETY
(MSL)	AC FT	IN	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)	(AC)
DA= 0.89 SQ MI = 570 AC										LATITUDE 42-43-09									
STREAM WATER QUALITY (A)										RUNOFF = 8.20 IN, PEAK FLOW = 272 CFS									
SITE-CV-1808										SITE-CV-1810									
SITE RATING (1)										SITE RATING (2)									
821.8	0	0.0	6	4110	26	16000	1.7	831.1	E	197	4.1	1740	833.5	45	836.9	17	14	0.21	0.21
828.1	100	2.0	26	16000	8.2	832.6	E	258	5.4	1600	835.0	50	838.0	50	839.0	18	16	0.36	0.36
832.0	225	4.6	39	12260	12.1	834.5	E	341	7.1	1410	836.9	57	839.9	57	842.8	20	21	0.47	0.47
834.9	350	7.3	50	11340	14.8	837.4	E	493	10.3	1140	839.8	68	842.8	68	844.8	23	31	0.56	0.56
837.1	475	10.0	58	10820	17.2	839.6	E	638	13.3	990	841.8	73	844.8	73	844.8	25	39	0.56	0.56
CA= 1.43 SQ MI = 915 AC										LATITUDE 42-29-06									
STREAM WATER QUALITY (A)										RUNOFF = 8.20 IN, PEAK FLOW = 437 CFS									
SITE-CV-1810										SITE-CV-1810									
SITE RATING (1)										SITE RATING (2)									
956.0	0	0.0	11	2720	47	5770	1.0	962.9	E	317	4.1	670	965.1	71	968.4	13	7	0.25	0.25
959.3	100	1.2	47	5770	4.3	963.8	E	375	4.9	730	966.3	75	969.3	75	975.0	14	8	0.64	0.64
964.5	423	5.5	70	4990	9.6	969.0	E	779	10.2	450	971.3	90	975.0	90	976.8	20	15	0.88	0.88
968.9	745	9.8	83	4690	13.8	971.4	E	973	12.8	400	973.8	96	976.8	96	980.1	22	18	1.06	1.06
972.5	1064	13.8	93	4690	17.5	975.0	E	1315	17.2	330	977.1	105	980.1	105	980.1	25	25	1.06	1.06

NOTES - (1) CCSTs ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

EXISTING SITE CV-1803 (Graham Pond)

Location: On Plympton Brook about 200 feet upstream from Locks Village Road in Wendell, Mass.

Millers Falls, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
929	6	14	850 1.33

Potential for Expansion: Please refer to Site Data and Design Summary Table for Potential Site CV-1803 for details.

Remarks: The dam is an earthfill structure about 500 feet long, with a 20-foot top width. The spillway is a concrete drop-structure having a maximum depth of 2.5 feet with 1.5 feet of flashboards. A pond drain is located near the center of the weir.

Ownership and Use: The pond is owned by Richard C. Wolfe and is used for fish culture.

EXISTING SITE CV-1807 (McAvoy Dam)

Location: On Tyler Brook about 25 feet upstream from Locks Village Road in Wendell, Mass.

Millers Falls, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
847	17	9	1,850 2.89

Potential for Expansion: Please refer to Site Data and Design Summary Table for Potential Site CV-1807 for details.

Remarks: The dam is part of the Locks Village Road embankment and is about 150-feet long with a 20-foot top width. The principal spillway is a concrete drop-structure with gate control. The spillway is 23 feet wide has a maximum head of 2.5 feet and a 9-foot drop from the crest to outlet channel. Water passes beneath the road through a concrete box culvert.

Ownership and Use: The site is owned by Herbert McAvoy and is used for recreation and fire protection.

EXISTING SITE CV-1811 (Lake Pleasant)

Location: On Pond Brook about 3,000 feet upstream from the Boston and Maine Railroad tracks in Montague, Mass.

Greenfield, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>264</u>	<u>50</u>	<u>10</u>	<u>1,400 2.19</u>

Potential for Expansion: Steep topography limits any significant increase in surface area or storage.

Remarks: The dam is an earthfill structure about 150 feet long with a top width of 5 feet. The principal spillway, located near the center of the dam, is a concrete drop-inlet chute structure, 22 feet wide with 1.5 feet of flashboards. Heavy brush is growing on both slopes. Concrete in the spillway is cracked in places.

Ownership and Use: The lake is owned by the Turners Falls Fire District and is used for fire protection and water supply.

EXISTING SITE CV-1812 (Fiske Pond)

Location: On Fiske Brook about 2,300 feet upstream from Lake View Road in Wendell, Mass.

Millers Falls, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>849</u>	<u>8</u>	<u>20</u>	<u>550 0.86</u>

Potential for Expansion: Raising the existing water level about 20 feet would provide about 40 acres of water surface. No facilities would be affected.

Remarks: The dam is an earthfill structure about 200 feet long with a 3-foot top width. The spillway is a two-section, 8-foot wide concrete weir. The first section is a drop-structure 1.5 feet deep. The next section is a riprapped channel one-foot deep. Both slopes of the dam are covered with brush.

Ownership and Use: The pond is owned by David Seigel and is used to store water.

EXISTING SITE CV-1813 (Tyler Pond)

Location: On Tyler Brook about 800 feet downstream from Locks Village Road in Wendell, Mass.

Millers Falls, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
836	2	7	1,850 2.89

Potential for Expansion: Tyler Pond is about 400 feet downstream from Potential Site CV-1807. Please refer to Site Data and Design Summary Table for CV-1807 for details.

Remarks: The dam is an earthfill structure about 100 feet long with an 8-foot top width. The principal spillway, located near the left abutment, is two 18-inch corrugated metal pipes outletting through wood cribbing. The emergency spillway, located on the right abutment, is a rock channel. Both the upstream and downstream slopes are covered with brush. The right abutment is a beach area with recreational facilities.

Ownership and Use: The pond is owned by Calvin Harrington and is used for recreation.

EXISTING SITE CV-1814 (Lake Wyola)

Location: On the Sawmill River about 150 feet upstream from Locks Pond Road in Shutesbury, Mass.

Millers Falls, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
831	120	8	4,300 6.72

Potential for Expansion: Limited; many houses and cottages line the entire shore.

EXISTING SITE CV-1814 (Lake Wyola) (cont'd.)

Remarks: The dam is an earthfill structure about 300 feet long. The upstream slope is faced with hand-placed stone. The principal spillway is a concrete drop-structure, 24 feet wide and 1.5 feet deep. The water outlets through the weir, down a concrete apron and then onto rock riprap at the outlet channel. A 16-foot wide, 9-inch deep, concrete emergency spillway is located to the right of the principal spillway.

Ownership and Use: The lake is an enlarged Great Pond. The dam and flowage rights are owned by the town of Shutesbury and the lake is used for recreation.

EXISTING SITE CV-1815 (Ames Pond)

Location: On an unnamed tributary to Lake Wyola about 700 feet upstream from Wendell Road in Shutesbury, Mass.

Shutesbury, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres)	(Sq. Mi.)
888	10	7	350	0.55

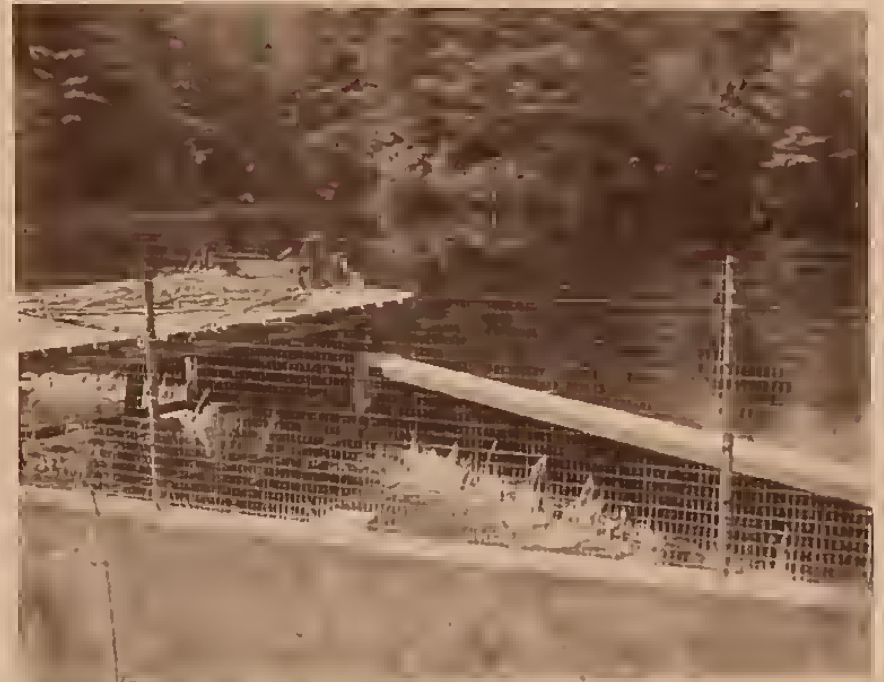
Potential for Expansion: The small drainage area limits the potential for expansion.

Remarks: The dam is an earthfill structure about 100 feet long with a 2-foot top width. The spillway is a rock drop-structure, 4 feet wide. The drop-structure is in poor condition. Many rocks have fallen into the outlet channel. Both slopes of the dam are covered with brush and trees.

Ownership and Use: The pond is owned by Peter Humphrey and has no specific use at the present time.



CV-1803
Graham Pond



CV-1807
McAvoy Dam



CV-1811
Lake Pleasant

EXISTING RESERVOIRS
SUBWATERSHED CV-18
SAWMILL RIVER





CV-1812
Fiske Pond



CV-1814
Lake Wyola

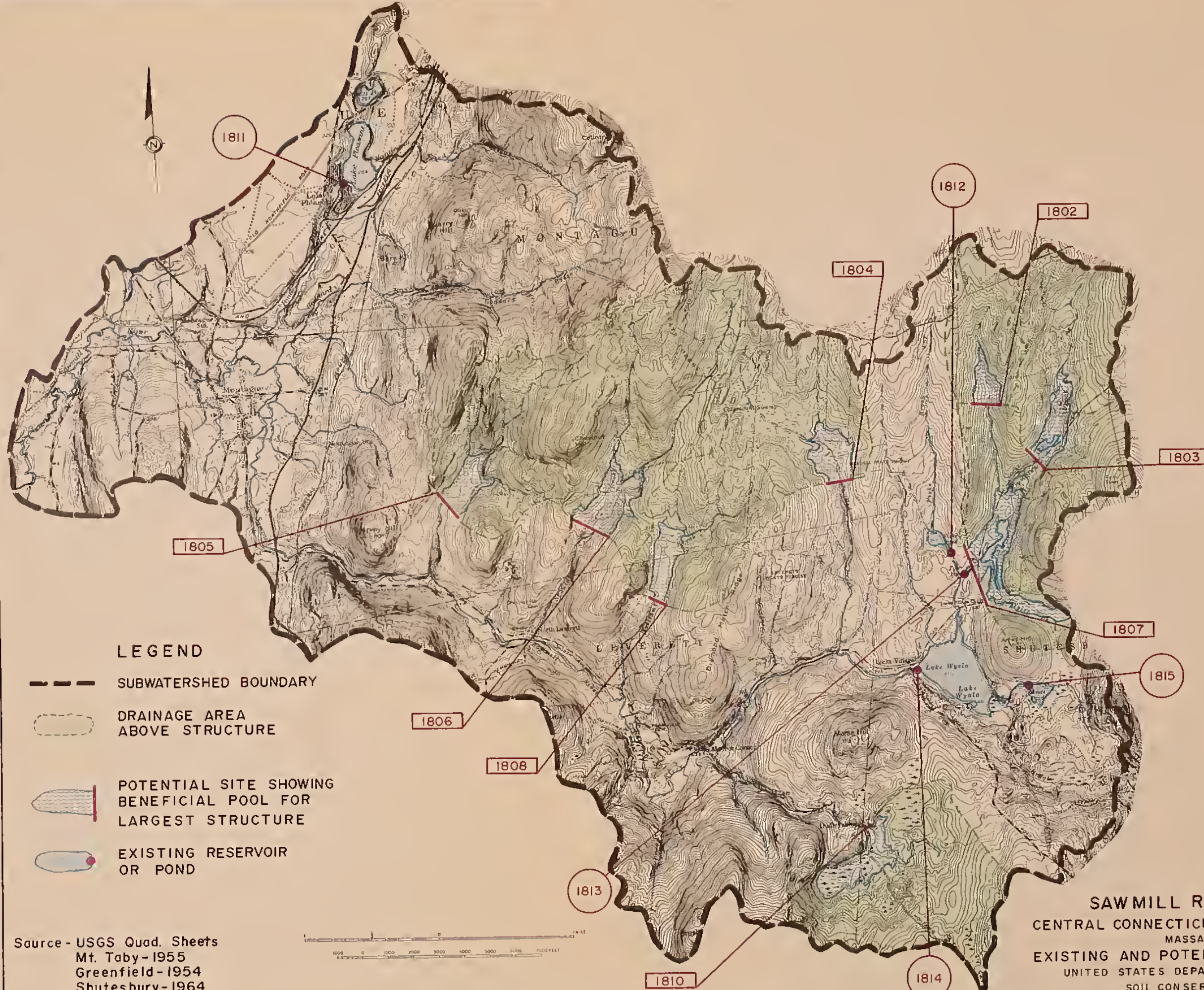


CV-1813
Tyler Pond



CV-1815
Ames Pond





LEGEND

- SUBWATERSHED BOUNDARY
- - - DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- EXISTING RESERVOIR OR POND

Source - USGS Quad. Sheets
Mt. Taby - 1955
Greenfield - 1954
Shutesbury - 1964
Millers Falls - 1961



SAWMILL RIVER (CV-18)
CENTRAL CONNECTICUT VALLEY STUDY AREA
MASSACHUSETTS
EXISTING AND POTENTIAL RESERVOIR SITES
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

CENTRAL CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed CV-19, Mill River

The Mill River subwatershed covers about 22,400 acres in Leverett, Shutesbury, and Sunderland in Franklin County; and Amherst and Hadley in Hampshire County.

The major stream is the Mill River which flows from Factory Hollow Pond in North Amherst southwesterly to the Connecticut River in Hadley.

Geology of the potential reservoir sites is characterized by glacial till and outwash sand and gravel underlain by gneiss and triassic sandstone and shale bedrock.

Four potential reservoir sites and four existing reservoirs were studied.

POTENTIAL SITE CV-1901

Location: On Doolittle Brook about 3,200 feet downstream from Rattlesnake Road in Leverett, Mass.

Shutesbury, Mass. USGS quadrangle

Latitude: $42^{\circ}28'07''$ Longitude: $72^{\circ}29'50''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	440
	2 Houses	435
	2 Houses	430
	3 Houses	425
	Radio shop	425
	Montague Road and utilities	415
	Rattlesnake Road	415

POTENTIAL SITE CV-1901 (cont'd)

Geologic Conditions: The right abutment is silty sand with gravel, cobbles, and boulders (glacial till); shallow to bedrock. The left abutment is valley fill sand and gravel. Surficial deposits are swamp, glacial till, and valley fill sand and gravel. Depth to bedrock in the foundation is estimated to be from 15 to 25 feet. Waterholding capabilities appear to be fair. Leakage is expected through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-1902

Location: On Doolittle Brook at the confluence with Roaring Brook in Leverett, Mass.

Shutesbury, Mass. USGS quadrangle

Latitude: 42°26'09" Longitude: 72°29'35"

Facilities Affected:	Facility	Elevation
	House	370
	House	365
	East Leverett Road	360
	Shutesbury Road and utilities	355
	2 Houses	355
	5 Houses	350
	High tension lines	340

Geologic Conditions: The right abutment is silty sand with gravel, cobbles, and boulders (glacial till) shallow to bedrock. The left abutment is valley fill sand and gravel. Surficial deposits are valley fill sand and gravel, glacial till, and schist bedrock. Depth to schist bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through the left abutment and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

This is substantially the same site as Site M6-3 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970.

POTENTIAL SITE CV-1903

Location: On an unnamed tributary to the Mill River about 4,300 feet upstream from Route 63 in Amherst, Mass.

Mt. Toby, Mass. USGS quadrangle

Latitude: 42°25'39" Longitude: 72°31'24"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Juggler Meadow Road and utilities	290

Geologic Conditions: Both abutments and surficial deposits are outwash sand and gravel. Depth the gneiss bedrock in the foundation is estimated to be 40 to 50 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

This is substantially the same site as Site M6-2 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970.

POTENTIAL SITE CV-1904

Location: On an unnamed tributary to the Mill River about 500 feet upstream from Route 63, Amherst, Mass.

Mt. Toby, Mass. USGS quadrangle

Latitude: 42°25'07" Longitude: 72°31'34"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	250
	Route 63	245
	2 Houses	230
	2 Houses and museum	225
	Clubhouse	220
	High tension line	200
	Tobacco barn	198
	Telephone cable	188

Geologic Conditions: Both abutments and surficial deposits are outwash sand and gravel. Depth to triassic sandstone, shale bedrock in the foundation is estimated to be 40 to 50 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED MILL RIVER									
BENEFICIAL POOL										DESIGN * HIGH WATER *									
ELEV	STORAGE	AC FT	IN	AC	SURF	COST/	DEPTH	AT	PER	STORAGE	AT CREST	PER	AC FT	ELEV	AREA	ELEV	HGT	FILL	PERCENT
(MSL)	AC FT	IN	AC	(\$)	(\$)	(FT)	(FT)	DAM	AC	(\$)	(\$)	(\$)	(\$)	(MSL)	(AC)	(MSL)	(FT)	(1000	CHANCE
DA= 1.62 SQ MI = 1037 AC										USGS QUAD-SHUTESBURY									
SITE-RATING (1)										100-YR PRIN SPWY DESIGN STORM									
DA= 13.00 SQ MI = 8320 AC										USGS QUAD-SHUTESBURY									
SITE-RATING (3)										100-YR PRIN SPWY DESIGN STORM									
404.0	0	0.0	6	2540	22	11590	12.1	4.0	4.1	359	4.1	870	60	422.7	60	427.2	27	25	0.26
412.0	100	1.2	22	1380	46	10240	19.2	179	2.0	483	5.6	970	73	426.0	73	430.0	30	32	0.60
419.2	341	3.9	77	840	96	8620	27.0	32.5	18.0	1558	18.0	530	108	432.9	97	436.7	37	52	0.99
427.0	823	9.5	96	630	96	8620	32.5	32.5	18.0	1558	18.0	530	108	437.2	108	440.2	40	68	1.25
432.5	1300	15.0	96	630	96	8620	32.5	32.5	18.0	1558	18.0	530	108	437.2	108	440.2	40	68	1.25
SITE-RATING (3)										LATITUDE 42-28-07 LONGITUDE 72-29-50									
DA= 13.00 SQ MI = 8320 AC										USGS QUAD-SHUTESBURY									
SITE-RATING (3)										100-YR PRIN SPWY DESIGN STORM									
341.2	0	0.0	29	7490	48	15710	6.3	8.6	4.1	2877	4.1	570	60	369.9	60	380.2	45	290	0.43
343.6	100	0.1	48	1580	119	10650	17.0	22.1	3.0	2063	3.0	750	122	350.5	104	356.0	21	47	2.10
352.0	801	1.2	171	1030	171	9090	22.1	29.0	4.3	3008	4.3	690	122	359.7	197	365.9	31	117	3.26
357.1	1502	2.2	223	720	223	9350	29.0	29.0	4.3	3008	4.3	690	122	365.1	229	371.2	36	172	4.94
364.1	2904	4.1	223	720	223	9350	29.0	29.0	4.3	3008	4.3	690	122	370.0	257	373.7	39	201	4.94
SITE-RATING (3)										LATITUDE 42-25-39 LONGITUDE 72-31-24									
DA= 1.92 SQ MI = 1229 AC										USGS QUAD-MT TOBY									
SITE-RATING (3)										100-YR PRIN SPWY DESIGN STORM									
263.4	0	0.0	6	2880	22	13300	14.0	6.4	4.1	425	4.1	860	63	281.4	63	284.4	27	44	0.28
271.0	100	1.0	22	1280	52	9100	21.2	29.5	5.1	527	5.1	890	69	276.0	69	279.0	22	22	0.66
278.2	370	3.5	80	780	80	8870	29.5	35.5	16.9	1731	16.9	540	122	283.2	97	286.2	29	53	1.13
286.5	909	8.8	101	640	101	9170	35.5	35.5	16.9	1731	16.9	540	122	291.4	97	294.4	37	111	1.43
292.5	1448	14.1	101	640	101	9170	35.5	35.5	16.9	1731	16.9	540	122	297.2	122	300.2	43	181	1.43
292.5	1450	14.2	101	640	101	9170	35.5	35.5	16.9	1731	16.9	540	122	297.4	122	300.4	43	182	1.43

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NON-

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED MILL RIVER									
BENEFICIAL POOL										DESIGN * HIGH WATER *									
EMERGENCY SPILLWAY										DAM									
ELEV										FILL									
STORAGE										VOL									
AC FT										CY									
IN										FT									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT										CY									
AC FT																			

EXISTING SITE CV-1910 (Leverett Pond)

Location: On a tributary of Doolittle Brook about 2,000 feet upstream from Montague Street in Leverett, Mass.

Mt. Toby, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>415</u>	<u>74</u>	<u>4</u>	<u>400 0.63</u>

Potential for Expansion: The small drainage area severely limits the potential for expansion.

Remarks: The dam is an earthfill structure about 100 feet long. The spillway is a concrete drop structure, 2.5 feet wide. The upstream slope of the dam is vegetated, the downstream slope is wooded.

Ownership and Use: The pond is owned by Mrs. Lucille Lewis and is used for recreation.

EXISTING SITE CV-1911 (Atkins Reservoir)

Location: On a tributary of Cushman Brook at Shutesbury Road in Shutesbury, Mass.

Shutesbury, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>435</u>	<u>59</u>	<u>30</u>	<u>* 388 0.60</u>

*Drainage area does not include any diverted streams.

Potential for Expansion: The small drainage area limits the potential for expansion. Flow from outside the watershed is diverted into Atkins Reservoir for water supply use.

Remarks: The dam is part of the January Hills Road embankment. It is 200 feet long with a 15-foot top width. A gate house, located in the center of the dam, controls flow to a pumping station. The downstream slope is wooded.

EXISTING SITE CV-1911 (Atkins Reservoir) (cont'd)

Ownership The reservoir is owned by the town of Amherst, Water
and Department, and is used for public water supply.
Use:

EXISTING SITE CV-1912 (Factory Hollow Pond)

Location: On Cushman Brook about 1,000 feet downstream from State
Street in Amherst, Mass.

Mt. Toby, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
223	7	25	9,950 15.55

Potential Steep topography limits any significant increase in
for surface area or storage.
Expansion:

Remarks: The dam is a rock masonry drop-structure about 40
feet long. Weir depth is about 1.5 feet. A 6-foot
wide rock masonry pad is located on the right side
and 10 feet beneath it is a 3.5-foot metal pipe drain
with no apparent gate control.

Ownership The pond is owned by the town of Amherst, Conservation
and Commission, and is used for recreation.
Use:

EXISTING SITE CV-1913 (Lake Warner)

Location: On the Mill River about 100 feet downstream from Mount Warner Road in Hadley, Mass.

Mt. Toby, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
128	62	20	19,100 29.84

Potential for Expansion: Limited; many residences of North Hadley would be affected. Steep topography along the length of the present lake limits any significant increase in surface area.

Remarks: The dam is a concrete drop-structure about 30 feet long with a gate control on the right abutment. The weir depth is 2 feet. The right abutment is a 3-foot thick concrete retaining wall.

Ownership and Use: The lake is owned by John Boisvert and is used for recreation.



CV-1910
Leverett Pond



CV-1912
Factory Hollow Pond



CV-1911
Atkins Reservoir



CV-1913
Lake Warner



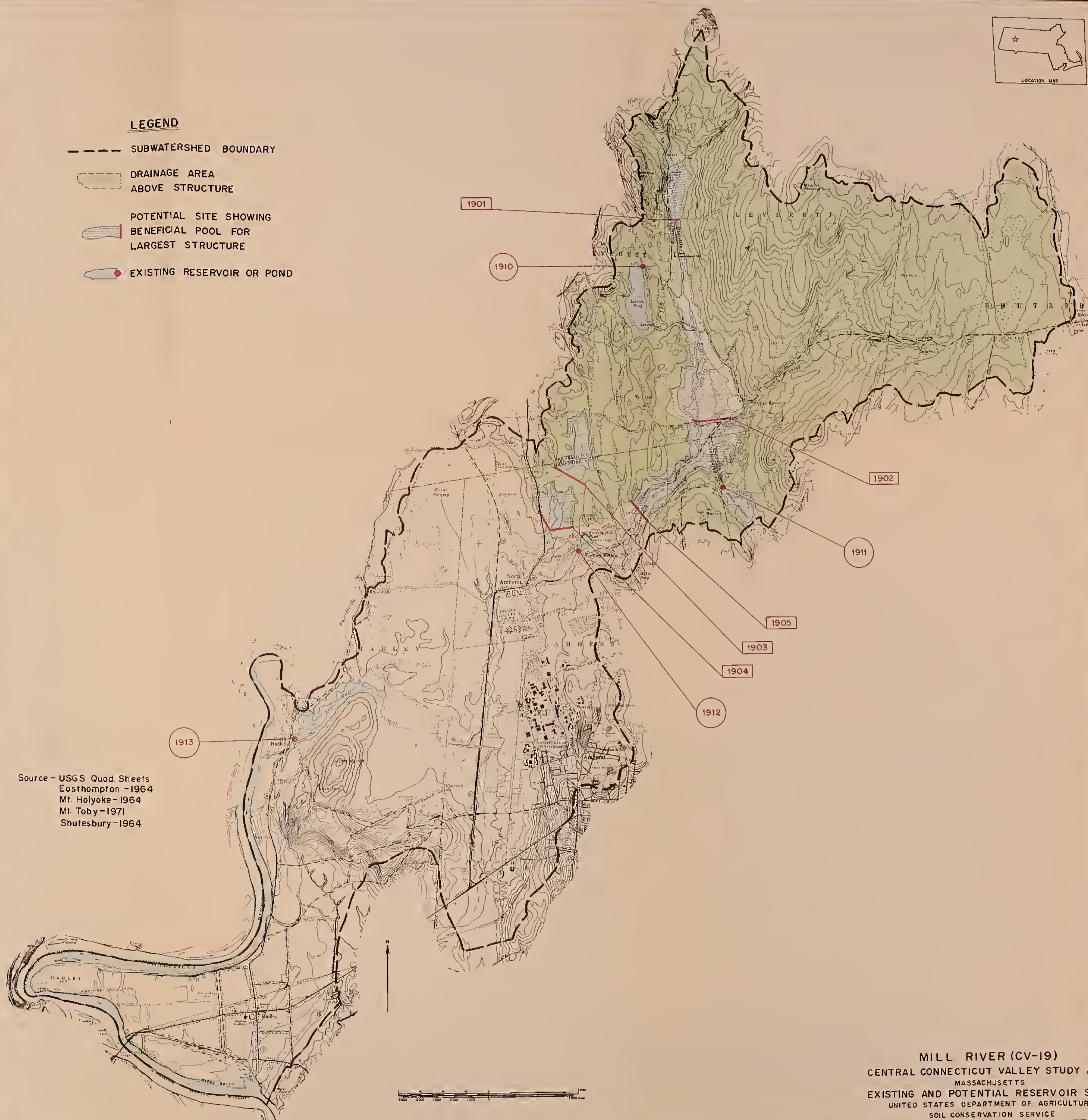
CV-1912
Factory Hollow Pond





LEGEND

- SUBWATERSHED BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- EXISTING RESERVOIR OR POND



Source - USGS Quad. Sheets
 Easthampton - 1964
 Mt. Holyoke - 1964
 Mt. Toby - 1971
 Shutesbury - 1964

MILL RIVER (CV-19)
 CENTRAL CONNECTICUT VALLEY STUDY AREA
 MASSACHUSETTS
 EXISTING AND POTENTIAL RESERVOIR SITES
 UNITED STATES DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE

CENTRAL CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed CV-20, Mill River

The Mill River subwatershed covers about 36,400 acres in Conway, Deerfield, and Whately in Franklin County; and Hatfield, Northampton, and Williamsburg in Hampshire County.

The major stream is the Mill River which originates in Conway and flows southeasterly through Deerfield and Whately into the Connecticut River in Hatfield.

Geology of the potential reservoir sites is characterized by glacial outwash, drift, or till underlain by schist bedrock.

Seven potential reservoir sites and two existing reservoirs were studied.

POTENTIAL SITE CV-2001

Location: On Mill River about 7,400 feet upstream from North Street in Deerfield, Mass.

Williamsburg, Mass. USGS quadrangle

Latitude: 42°29'06" Longitude: 72°38'06"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	230
	House and barns	225
	2 Houses and farm buildings	220
	South Mill River Road and utilities	215

Geologic Conditions: Both abutments are outwash sand and gravel. The intermediate terrace is lacustrine deposits of silt and sand. Surficial deposits are swamp, lacustrine silt and sand, and outwash sand and gravel. Depth to bedrock in the foundation is estimated to be from 80 to 100 feet. Waterholding capabilities appear to be fair to poor. Leakage is expected through both abutments. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2003

Location: On the Mill River about 150 feet upstream from Swamp Road in Whately, Mass.

Williamsburg, Mass. USGS quadrangle

Latitude: 42°26'50" Longitude: 72°38'01"

Facilities Affected: None below elevation 180.

Geologic Conditions: The right abutment is outwash sand and gravel. The left abutment is lacustrine silt and sand. Surficial deposits are swamp, outwash sand and gravel, and lacustrine silt and sand. Depth to bedrock in the foundation is estimated to be from 80 to 100 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2004

Location: On an unnamed stream about 150 feet upstream from Chestnut Road in Whately, Mass.

Williamsburg, Mass. USGS quadrangle

Latitude: 42°25'52" Longitude: 72°38'02"

Facilities Affected: None below elevation 203.

Geologic Conditions: Both abutments are sand with some gravel. Surficial deposits are lacustrine silts and outwash sand with some gravel. Depth to schist bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be fair to poor. Leakage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2005

Location: On Jimmy Nolan Brook about 3,000 feet upstream from the confluence with West Brook in Whately, Mass.

Williamsburg, Mass. USGS quadrangle

Latitude: 42°26'29" Longitude: 72°40'24"

Facilities None below elevation 617.
Affected:

Geologic Both abutments are silty sand with gravel, cobbles, and boulders
Conditions: (glacial till) with outwash sand and gravel higher on the abutments. Surficial deposits are outwash sand and gravel, glacial till, and bedrock. Bedrock outcrops in the foundation. Waterholding capabilities appear to be fair. Slight leakage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering The right abutment is recommended for the excavated emergency
Notes: spillway location.

POTENTIAL SITE CV-2007

Location: On West Brook about 3,700 feet downstream from Haydenville Road in Whately, Mass.

Williamsburg, Mass. USGS quadrangle

Latitude: 42°25'20" Longitude: 72°39'02"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Haydenville Road	375
	West Brook Road	355

Geologic Both abutments and the valley floor are bedrock. Waterholding
Conditions: capabilities appear to be good. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Preliminary structure designs indicate that a concrete emergency
Notes: spillway may be needed at this site.

POTENTIAL SITE CV-2008 (Fitzgerald's Pond)

Location: On Broad Brook about 900 feet upstream from the confluence with Running Gutter Brook in Hatfield, Mass.

Williamsburg, Mass. USGS quadrangle

Latitude: 42°22'35" Longitude: 72°38'55"

Facilities	Facility	Elevation
Affected:	Barn	195
	3 Barns and house	190
	Coles Meadow Road and utilities	188
	Telephone cable	178

Geologic Conditions: Both abutments are sand and gravel terrace deposits. Nested boulders or bedrock occur high on the left abutment. Surficial deposits are terrace sand and gravel and bedrock. Depth to bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and possibly through the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 185 an auxiliary dike will be required.

This is substantially the same site as Site M7-1 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970.

POTENTIAL SITE CV-2009

Location: On Broad Brook about 8,500 feet downstream from North Farms Road in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: 42°21'50" Longitude: 72°39'24"

Facilities	Facility	Elevation
Affected:	Telephone cable (overhead)	178

Geologic Conditions: The left abutment is bedrock. The right abutment is discontinuous deposits of silty sand with many boulders (englacial drift). Surficial deposits are swamp, bedrock, and englacial drift. Depth to bedrock in the foundation is estimated to be from 10 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY SUBWATERSHED MILL RIVER
BENEFICIAL POOL

ELEV	STORAGE	AC FT	IN	COST PER AC FT	AREA (AC)	DEPTH AT DAM (FT)	CREST ELEV + TYPE (MSL)	STORAGE AT CREST	DESIGN HIGH WATER	DAM	SAFE YIELD
(MSL)	AC FT	IN		(\$)	(AC)			AC FT			
DA= 5.10 SQ MI = 3264 AC USGS QUAD-WILLIAMSBURG											
SITE-CV-2001											
SITE RATING (2)											
199.1	0	0.0			16	5.1	227.6 E	1933	7.1	229.8	431
203.3	100	0.4			30	9.3	203.3 T	141	0.5	216.2	81
211.1	441	1.6			58	17.1	211.1 T	482	1.7	226.1	103
220.0	1122	4.1			97	26.0	220.0 T	1163	4.3	228.8	106
226.7	1804	6.6			104	32.7	226.7 T	1845	6.8	230.0	107

LATITUDE 42-29-06 LONGITUDE 72-38-06
RUNOFF = 8.20 IN, PEAK FLOW = 1559 CFS

STUDY AREA-CENTRAL CONNECTICUT VALLEY SUBWATERSHED MILL RIVER
BENEFICIAL POOL

ELEV	STORAGE	AC FT	IN	COST PER AC FT	AREA (AC)	DEPTH AT DAM (FT)	CREST ELEV + TYPE (MSL)	STORAGE AT CREST	DESIGN HIGH WATER	DAM	SAFE YIELD
(MSL)	AC FT	IN		(\$)	(AC)			AC FT			
DA= 18.18 SQ MI = 11635 AC USGS QUAD-WILLIAMSBURG											
SITE-CV-2003											
SITE RATING (1)											
173.8	100	0.1			77	8.8	173.8 T	245	0.3	180.0	168

LATITUDE 42-26-50 LONGITUDE 72-38-01
RUNOFF = 8.20 IN, PEAK FLOW = 3920 CFS

STUDY AREA-CENTRAL CONNECTICUT VALLEY SUBWATERSHED MILL RIVER
BENEFICIAL POOL

ELEV	STORAGE	AC FT	IN	COST PER AC FT	AREA (AC)	DEPTH AT DAM (FT)	CREST ELEV + TYPE (MSL)	STORAGE AT CREST	DESIGN HIGH WATER	DAM	SAFE YIELD
(MSL)	AC FT	IN		(\$)	(AC)			AC FT			
DA= 0.49 SQ MI = 314 AC USGS QUAD-WILLIAMSBURG											
SITE-CV-2004											
SITE RATING (3)											
179.3	0	0.0			2	4.4	189.2 E	108	4.1	191.5	24
189.0	100	3.8			20	14.0	191.5 E	159	6.1	193.8	27
192.5	180	6.8			25	17.5	195.0 E	250	9.6	197.3	31
195.5	260	9.8			29	20.5	198.0 E	338	13.0	200.2	34
198.1	340	13.0			32	23.1	200.6 E	427	16.2	202.8	37

LATITUDE 42-25-52 LONGITUDE 72-38-02
RUNOFF = 8.20 IN, PEAK FLOW = 150 CFS

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED MILL RIVER									
BENEFICIAL POOL										EMERGENCY SPILLWAY									
ELEV	STORAGE	COST PER AC FT	AREA (AC)	SURF AC	COST/AC	DEPTH AT DAM (FT)	CREST ELEV (MSL)	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER	DAM	SAFE YIELD							
(MSL)	AC FT	IN	(\$)	(\$)	(\$)		++ TYPE					AT 95 PERCENT CHANCE							
DA= 0.85 SQ MI = 544 AC										USGS QUAD-WILLIAMSBURG									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE-RATING (1)										LATITUDE 42-26-29 LONGITUDE 72-40-24									
582.0										RUNOFF = 8.20 IN, PEAK FLOW = 260 CFS									
603.3																			
606.0																			
610.3																			
612.5																			
SITE-CV-2007										LATITUDE 42-25-20 LONGITUDE 72-39-02									
582.0										RUNOFF = 8.20 IN, PEAK FLOW = 2438 CFS									
603.3																			
606.0																			
610.3																			
612.5																			
SITE-CV-2008										LATITUDE 42-22-35 LONGITUDE 72-38-55									
172.1										RUNOFF = 8.10 IN, PEAK FLOW = 1087 CFS									
176.6																			
182.8																			
188.8																			
192.5																			

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONF

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED MILL RIVER									
BENEFICIAL POOL										EMERGENCY SPILLWAY									
COST										DESIGN									
HIGH WATER										DAM									
YIELD										SAFE									
AT 95										PERCENT									
CHANCE										FILL VOL									
(1000										CY									
CY										FT									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										STORAGE									
AT										AT CREST									
DEPTH										ELEV									
CREST										TYPE									
ELEV										(MSL)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									
PER										PER									
COST										COST									
SURF										SURF									
AT										AT									
DEPTH										DEPTH									
CREST										CREST									
ELEV										ELEV									
TYPE										TYPE									
(MSL)										(MSL)									
(AC)										(AC)									
(\$)										(\$)									
AC FT										AC FT									
IN										IN									
STORAGE										STORAGE									
AT CREST										AT CREST									
AC FT										AC FT									

EXISTING SITE CV-2010 (Northampton Reservoir-Upper)

Location: On Avery Brook about 1,800 feet upstream from Williamsburg Road in Whately, Mass.

Williamsburg, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>675</u>	<u>82</u>	<u>80</u>	<u>2,650</u> <u>4.14</u>

Potential for Expansion: It appears that the water level could be raised 50 feet without affecting any facilities.

Remarks: The dam is an earthfill structure about 1,200 feet long. The upstream slope is riprapped; the downstream is vegetated. A 70-foot wide concrete ogee spillway, having a maximum head of 5 feet, is located near the left abutment. Water is carried from the spillway through a 30-foot wide rock channel to the lower reservoir. The normal pool has a capacity of 750 million gallons.

Ownership and Use: The reservoir is owned by the city of Northampton and is used for water supply.

EXISTING SITE CV-2011 (Northampton Reservoir-Lower)

Location: On Avery Brook at Williamsburg Road in Whately, Mass.

Williamsburg, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>596</u>	<u>8</u>	<u>15</u>	<u>2,750</u> <u>4.30</u>

Potential for Expansion: None. The upstream end of the reservoir is at the base of Northampton Reservoir-Upper, Existing Site CV-2010.

Remarks: The dam is part of the Williamsburg Road embankment and is about 200 feet long with a 10-foot top width. Both slopes are vegetated. The principal spillway, located on the right abutment, is a concrete chute weir with a drop of one foot. The exit channel is a rock masonry chute which outlets the water beneath Williamsburg Road.

Ownership and Use: The reservoir is owned by the City of Northampton and is used for water supply.



CV-2010
Northampton Reservoir (Upper)



CV-2011
Northampton Reservoir (Lower)



EXISTING RESERVOIRS
SUBWATERSHED CV-20
MILL RIVER





MILL RIVER (CV-20)
CENTRAL CONNECTICUT VALLEY STUDY AREA
MASSACHUSETTS
EXISTING AND POTENTIAL RESERVOIR SITES
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE



CENTRAL CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed CV-21, Fort River

The Fort River subwatershed covers about 37,900 acres in Leverett and Shutebury in Franklin County; and Amherst, Belcher-town, Granby, Hadley, and Pelham in Hampshire County.

The major stream is the Fort River which originates in Amherst and flows southwesterly through Hadley to the Connecticut River.

Geology of the potential reservoir sites is characterized as outwash sand and gravel underlain by triassic sandstone and shale.

Six potential reservoir sites and five existing reservoirs were studied.

POTENTIAL SITE CV-2101

Location: On an unnamed tributary to the Fort River about 100 feet upstream from the Central Vermont Railroad in Amherst, Mass.

Mt. Toby, Mass. USGS quadrangle

Latitude: 42°23'59" Longitude: 72°30'12"

Facilities Affected: None below elevation 248.

Geologic Conditions: Both of the abutments and the foundation are outwash sand and gravel. Depth to schist bedrock in the foundation is estimated to be from 60 to 70 feet. Waterholding capabilities appear to be fair to poor. Leakage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2102

Location: On Adams Brook about 3,400 feet upstream from its confluence with Amethyst Brook in the town of Amherst, Mass.

Shutebury, Mass. USGS quadrangle

Latitude: $42^{\circ}23'06''$ Longitude: $72^{\circ}29'23''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House, 2 tobacco sheds, barn	245
	House and barn	242
	House	235
	House	230
	House and shed	225
	House and 2 barns	215
	2 Tobacco sheds	210
	Northeast St. and utilities	207
	House, shed, garage	205
	High tension lines	190

Geologic Conditions: The right abutment is silty sand with gravel, cobbles, and boulders (glacial till). The left abutment is outwash sand and gravel. Surficial deposits are swamp, outwash sand and gravel, and glacial till. Depth to schist bedrock in the foundation is estimated to be from 90 to 100 feet. Waterholding capabilities appear to be poor. Leakage is expected through the left abutment and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

This is substantially the same site as Site M8-2 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970.

POTENTIAL SITE CV-2104

Location: On an unnamed tributary to the Fort River about 200 feet upstream from Moody Bridge Road in Hadley, Mass.

Mt. Holyoke, Mass. USGS quadrangle

Latitude: $42^{\circ}20'21''$ Longitude: $72^{\circ}33'25''$

Facilities Affected: None below elevation 157

POTENTIAL SITE CV-2104 (cont'd)

Geologic Conditions: Both abutments are outwash sand and gravel possibly underlain by thinly bedded lacustrine deposits. Surficial deposits are swamp, and outwash sand and gravel. Depth to triassic sandstone and shale bedrock is estimated to be from 80 to 100 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2105

Location: On Harts Brook about 600 feet upstream from Bay Road in Hadley, Mass.

Mt. Holyoke, Mass. USGS quadrangle

Latitude: 42°19'14" Longitude: 72°33'48"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	2 Houses	175
	House	174
	Bay Road and utilities	172
	2 Houses and dairy buildings	172
	2 Houses, garage, and barn	170

Geologic Conditions: Both abutments outwash sand and gravel with possibly some thinly bedded lacustrine sediment in the foundation. Surficial deposits are outwash sand and gravel. Depth to triassic sandstone in the foundation is estimated to be from 80 to 100 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Previous borrow material for dam construction was located near the site; impervious material may need to be obtained off the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2106

Location: On Plum Brook about 1,000 feet upstream from Pomeroy Lane
in Amherst, Mass.

Mt. Holyoke, Mass. USGS quadrangle

Latitude: $42^{\circ}20'16''$ Longitude: $72^{\circ}30'38''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	2 Houses	178
	House	174
	4 Houses	172
	2 Tobacco barns	172
	Underground telephone cable	165
	Potwine Road	158

Geologic Conditions: Both abutments are outwash sand and gravel underlain by lacustrine deposits. Surficial deposits are lacustrine silts and outwash sand and gravel. Depth to triassic sandstone and shale bedrock is estimated to be from 80 to 100 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2107

Location: On Hop Brook about 100 feet upstream from Warren Wright Street
in Pelham, Mass.

Belchertown, Mass. USGS quadrangle

Latitude: $42^{\circ}19'12''$ Longitude: $72^{\circ}27'39''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	222
	Federal St. and utilities	222
	6 Houses	220
	House	218
	House	215
	Goodell Road and utilities	212
	House and garage	212
	Orchard Road and utilities	200

POTENTIAL SITE CV-2107 (cont'd)

Geologic Conditions: Both abutments are fine to coarse sand with some gravel. Surficial deposits are swamp and outwash sand. Depth to triassic conglomerate bedrock is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

[illegible]

NGTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE.
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

EXISTING SITE CV-2110 (Baker Reservoir)

Location: On Deane Brook about 25 feet upstream from Baker Road in Shutesbury, Mass.

Shutesbury, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>975 est.</u>	<u>5</u>	<u>4</u>	<u>325 0.51</u>

Potential for Expansion: The small drainage area limits expansion potential.

Remarks: The dam is an earthfill structure about 50 feet long with a 2-foot top width. The principal spillway is a concrete weir, 4 feet wide and 1-foot deep with provisions for stop-logs.

Ownership and Use: The reservoir is owned by George Plaza and Alfred Moulton and is used for recreation.

EXISTING SITE CV-2111 (Hill Reservoir)

Location: On Amethyst Brook about 2,400 feet upstream from Gates Road in Pelham, Mass.

Shutesbury, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>605</u>	<u>8</u>	<u>8</u>	<u>2,600 4.06</u>

Potential for Expansion: Steep topography limits any significant increase in surface area and storage.

Remarks: The dam is an earthfill structure about 500 feet long with an 8-foot top width. The principal spillway is a 32-foot wide concrete step weir having a maximum head of 4 feet and provisions for 1 foot of flashboards. Water outlets through a gravel chute with stone masonry sidewalls and then through a 7-step concrete channel. Concrete in the spillway is cracked in places.

EXISTING SITE CV-2111 (Hill Reservoir) (cont'd)

Ownership The reservoir is owned by the Town of Amherst and is used
and
Use: for water supply.

EXISTING SITE CV-2112 (Hawley Reservoir)

Location: On Harris Brook about 50 feet upstream from Amherst Road
in Pelham, Mass.

Belchertown and Shutesbury, Mass. USGS quadrangles

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
608 est.	5	14	800 1.25

Potential Limited due to excessive diking necessary on the right
for
Expansion: abutment. Raising the existing water level by about
40 feet would provide about 80 acres of water surface.
Amherst Road would be affected.

Remarks: The dam is a stone masonry and concrete structure about
150 feet long. The upstream face is concrete and slightly
sloped, while the downstream face is vertical rock masonry.
The top of the dam is concrete and 8 feet wide. The spill-
way is a concrete drop-structure, 16 feet wide and one
foot deep. Masonry in the dam is cracked and the concrete
is beginning to spall.

Ownership The reservoir is owned by the town of Amherst and is used
and
Use: for water supply.

EXISTING SITE CV-2113 (Scarboro Pond)

Location: On Scarboro Brook about 25 feet upstream from Gulf Road in Belchertown, Mass.

Belchertown, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
733 est.	1	15	950 1.48

Potential for Expansion: Steep topography limits any significant increase in surface area or storage.

Remarks: The dam is a rock masonry structure about 150 feet long with a 7-foot top width. The principal spillway is a 13-foot wide rock masonry drop-structure, 1.5 feet deep.

Ownership and Use: The pond is owned by the Pelham Country Club and is used for recreation.

EXISTING SITE CV-2114 (Hadley Reservoir)

Location: On Harts Brook about 8,000 feet upstream from Bay Road in Hadley, Mass.

Mt. Holyoke, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
255 est.	3	10	300 0.47

Potential for Expansion: The small drainage area limits the potential for expansion.

Remarks: The dam is an earthfill structure about 500 feet long with a 20-foot top width. The spillway is a concrete weir, 12 feet wide and 1.5 feet deep. Concrete in the spillway is spalling.

Ownership and Use: The reservoir is owned by the town of Hadley and is used for water supply.



CV-2110
Baker Reservoir



CV-2113
Scarboro Pond



CV-2111
Hill Reservoir

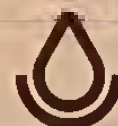


CV-2114
Hadley Reservoir



CV-2112
Hawley Reservoir

EXISTING RESERVOIRS
SUBWATERSHED CV-21
FORT RIVER

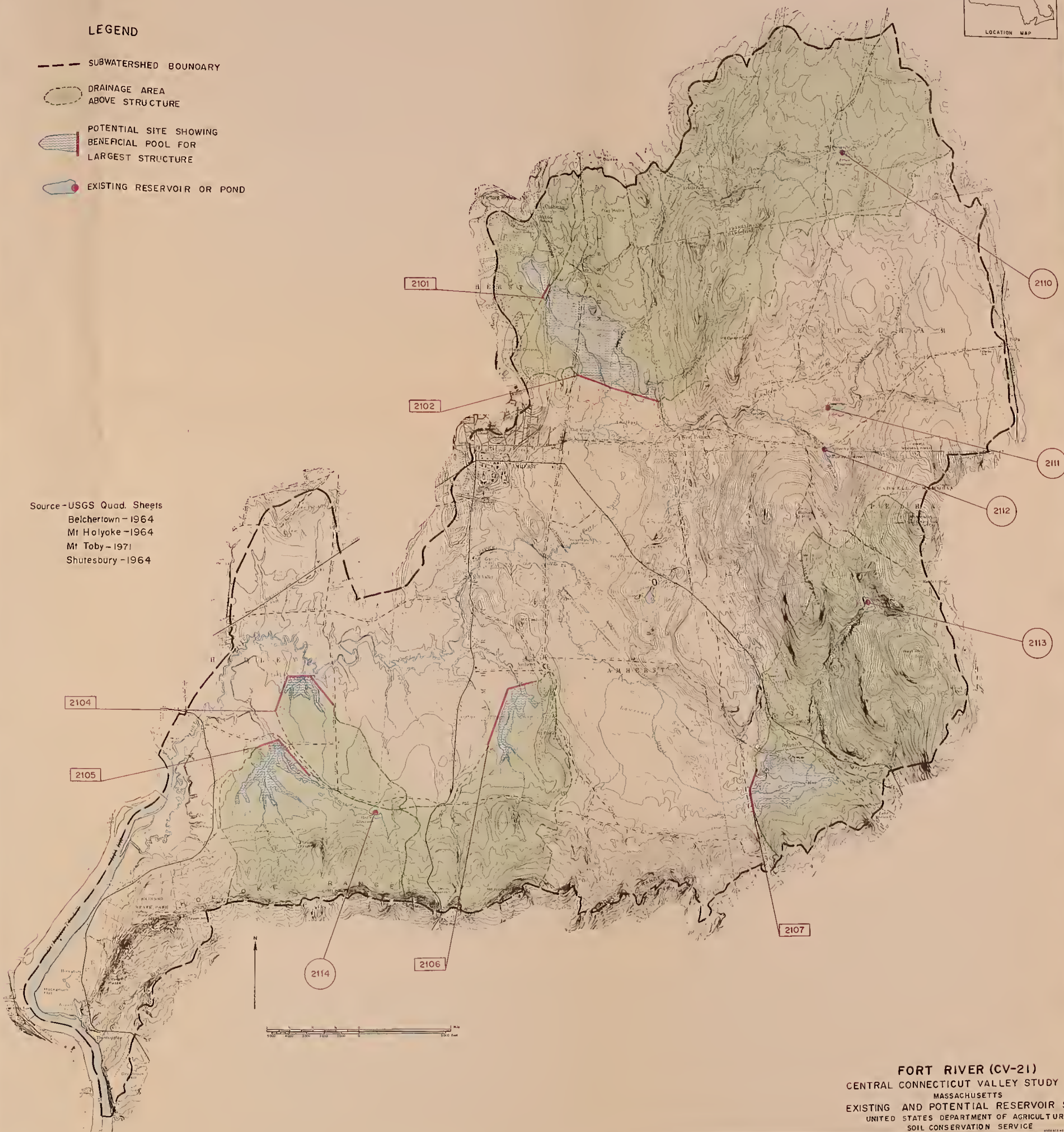




LEGEND

- SUBWATERSHED BOUNOARY
- DRAINAGE AREA ABOVE STRUCTURE
- ▨ POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- EXISTING RESERVOIR OR POND

Source - USGS Quad. Sheets
 Belchertown - 1964
 Mt Holyoke - 1964
 Mt Toby - 1971
 Shutesbury - 1964



FORT RIVER (CV-21)
 CENTRAL CONNECTICUT VALLEY STUDY AREA
 MASSACHUSETTS
 EXISTING AND POTENTIAL RESERVOIR SITES
 UNITED STATES DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE

CENTRAL CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed CV-22, Mill River

The Mill River subwatershed covers about 38,200 acres in Ashfield, Conway, and Whately in Franklin County; and Chesterfield, Easthampton, Goshen, Hatfield, Northampton, Westhampton, and Williamsburg in Hampshire County.

The major stream is the Mill River which originates in Goshen and flows southeasterly through Williamsburg and Northampton to the Connecticut River.

Geology of the potential reservoir sites is characterized by glacial till underlain by schist or gneiss bedrock.

The Mill River watershed was identified in the 1970 Comprehensive Study of the Connecticut River Basin as having potential for a possible PL-566 flood control project. A preliminary investigation report indicated that a feasible project could be developed to provide flood control, recreation, and fish and wildlife benefits. Further planning efforts were suspended because of a lack of local interest.

The Mill River was selected as one of three watersheds to be re-studied in the Supplemental Study of the Connecticut River Basin.

Fifteen potential reservoir sites and eleven existing reservoirs were studied in this inventory.

POTENTIAL SITE CV-2201

Location: On the East Branch of the Mill River about 3,000 feet upstream from the confluence of Bradford Brook in Williamsburg, Mass.

Williamsburg, Mass. USGS quadrangle

Latitude: 42°26'03" Longitude: 72°43'57"

Facilities None below elevation 875.
Affected:

Geologic Both abutments are silty sand with gravel, cobbles, and boulders
Conditions: (glacial till). Surficial deposits are glacial till and poorly graded gravel with cobbles and boulders. Bedrock outcrops in the brook and is shallow elsewhere. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering The right abutment is recommended for the excavated emergency
Notes: spillway location.

POTENTIAL SITE CV-2202

Location: On the East Branch of the Mill River about 1,900 feet downstream from Valley Road in Williamsburg, Mass.

Williamsburg, Mass. USGS quadrangle

Latitude: $42^{\circ}25'26''$ Longitude: $72^{\circ}44'15''$

Facilities Affected:	Facility	Elevation
	Ashfield Rd., & utilities	785
	Conway Rd. & utilities	785
	House	785
	House	782
	Hemenway Rd. & utilities	718
	3 Camps, 2 houses, 1 garage	710
	Williamsburg Valley Rd. and utilities	705
	House	700

Geologic Conditions: Both abutments and surficial deposits are silty sand with gravel, cobbles, and boulders (glacial till). Depth to schist bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

This is substantially the same site as Site M9-2 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970, and Site 2 that was included in the Preliminary Investigation of the Mill River Watershed, U.S. Department of Agriculture, November 1971.

POTENTIAL SITE CV-2203

Location: On Mill River about 2,500 feet upstream from Old Goshen Road in Williamsburg, Mass.

Goshen, Mass. USGS quadrangle

Latitude: $42^{\circ}25'33''$ Longitude: $72^{\circ}46'17''$

Facilities Affected: None below elevation 1,077

Geologic Conditions: The left abutment is glacial outwash poorly graded sand or gravel. The right abutment is glacial drift, sand and gravel with many boulders, and is shallow to bedrock. Rock outcrops high on the right abutment. Surficial deposits are glacial outwash and englacial drift. Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be fair. Leakage is expected through the left abutment. Pervious borrow material for dam construction was located near the site; impervious material was not located.

POTENTIAL SITE CV-2203 (cont'd)

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2204

Location: On an unnamed tributary to Joe Wright Brook about 2,300 feet southeast of the intersection of Depot and Adams Roads in Williamsburg, Mass.

Williamsburg, Mass. USGS quadrangle

Latitude: 42°23'55" Longitude: 72°42'26"

Facilities Affected: None below elevation 607.

Geologic Conditions: Both abutments are silty sand with gravel, cobbles and boulders (glacial till). Bedrock outcrops high on the right abutment. Surficial deposits are glacial till. Depth to schist bedrock in the foundation is estimated to be from 20 to 30 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2205

Location: On an unnamed tributary to the West Branch of the Mill River about 1,500 feet downstream from Hyde Hill Road in Goshen, Mass.

Goshen, Mass. USGS quadrangle

Latitude: 42°24'43" Longitude: 72°46'30"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Hyde Hill Road	1,178

Geologic Conditions: Both abutments are schist bedrock. Surficial deposits are englacial drift and schist bedrock. Depth to schist bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Previous borrow material for dam construction was located near the site: impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2206

Location: On the Mill River about 900 feet upstream from Village Hill Road in Williamsburg, Mass.

Goshen, Mass. USGS quadrangle

Latitude: 42°24'24" Longitude: 72°45'05"

Facilities Affected:	Facility	Elevation
	House	825
	House and barn	822
	House	818
	House and barn	810
	Camp	805
	Route 9	795
	Goshen Rd. and utilities	795

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Surficial deposits are glacial till. Depth to schist bedrock in the foundation is estimated to be about 10 feet. Waterholding capability appears to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location. See Existing Site CV-2206 for data on the existing dam and reservoir at this site.

This is substantially the same site as Site M9-3 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970; and site 3 that was included in the Preliminary Investigation of the Mill River Watershed, U. S. Department of Agriculture, November 1971.

POTENTIAL SITE CV-2207

Location: On Beaver Brook about 1,500 feet downstream from Mountain Street in Williamsburg, Mass.

Williamsburg, Mass. USGS quadrangle

Latitude: 42°22'48" Longitude: 72°41'13"

Facilities Affected:	Facility	Elevation
	2 Houses and barn	435
	Cemetery	432
	House, chicken houses	432
	3 Houses and buildings	430
	North Farms Road	428
	House and garage	420
	Mountain Street	410

Geologic Conditions: Both abutments and the foundation are silty sand with gravel, cobbles, and boulders. Depth to schist bedrock in the foundation is estimated to be from 20 to 30 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2208

Location: On Unquomunk Brook about 1800 feet upstream from the confluence with the Mill River in Williamsburg, Mass.

Williamsburg, Mass. USGS quadrangle

Latitude: 42°23'08" Longitude: 72°43'18"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	House	552
	House	550
	South St. and utilities	548
	Buildings	536

Geologic Conditions: The left abutment is poorly graded sand and gravel (glacial outwash). The right abutment is poorly graded sand with gravel, cobbles, and boulders. Some outwash sand and gravel may occur high on the right abutment. Surficial deposits are glacial outwash and englacial drift. Depth to schist bedrock is estimated to be from 20 to 30 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and possibly through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2209

Location: On Meekin Brook about 4,600 feet upstream from Route 143 in Williamsburg, Mass.

Goshen, Mass. USGS quadrangle

Latitude: 42°23'24" Longitude: 72°45'20"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Barn	910
	2 Houses	905

Geologic Conditions: Both abutments and surficial deposits are silty sand with gravel, cobbles, and boulders (glacial till). Depth to schist bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

POTENTIAL SITE CV-2209 (cont'd)

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location. If the site is developed to the elevation 935, an auxiliary dike will be required.

This is substantially the same site as Site M9-6 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970.

POTENTIAL SITE CV-2210

Location: On Roberts Meadow Brook at Roberts Meadow Reservoir in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: 42°21'06" Longitude: 72°42'37"

Facilities Affected:	Facility	Elevation
	Upper Reservoir	450
	House, garage, barn	445
	House	440
	Kennedy Rd. & utilities	428
	Chesterfield Rd. & utilities	418
	Sylvester Rd. & utilities	415
	Utility Lines	410
	Reservoir Rd. & utilities	405

Geologic Conditions: The right abutment is gneiss bedrock. The left abutment is thin glacial drift underlain by gneiss bedrock. Surficial deposits are glacial drift and gneiss bedrock. Depth to gneiss bedrock in the foundation is estimated to be from 10 to 20 feet. Water-holding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary designs indicate that a concrete emergency spillway may be needed at this site. Auxiliary dikes would be required at elevation 415, 435, and 455.

This is substantially the same site as Site M9-7 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970; and Site 7 that was included in the Preliminary Investigation of the Mill River Watershed, U.S. Department of Agriculture, November 1971.

Public Ownership: Roberts Meadow Reservoir and the adjacent area is owned by the City of Northampton.

POTENTIAL SITE CV-2211

Location: On Brewer Brook about 7,900 feet upstream from its confluence with Roberts Meadow Brook in Westhampton, Mass.

Westhampton, Mass. USGS quadrangle

Latitude: $42^{\circ}21'44''$ Longitude: $72^{\circ}45'46''$

Facilities Affected: None below elevation 1,070.

Geologic Conditions: Both abutments are silty sand with gravel, cobbles and boulders (glacial till). Surficial deposits are glacial till, englacial drift, and granulate and pegmatite bedrock. Depth to pegmatite bedrock in the foundation is estimated to be less than 10 feet. Waterholding capabilities appear to be fair to good. Leakage is expected through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2212

Location: On Marble Brook about 6,100 feet upstream from its confluence with Roberts Meadow Brook in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: $42^{\circ}21'12''$ Longitude: $72^{\circ}44'06''$

Facilities Affected: None below elevation 547.

Geologic Conditions: Both abutments are silty sand, gravel, cobbles and boulders, shallow to bedrock. Surficial deposits are englacial drift and bedrock. Depth to granite gneiss bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2213

Location: On Marble Brook about 2,700 feet upstream from the confluence with Roberts Meadow Brook in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: $42^{\circ}20'32''$ Longitude: $72^{\circ}44'07''$

Facilities Affected: None below elevation 537

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (englacial drift). Surficial deposits are englacial drift and terrace sand and gravel. Depth to gneiss bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be fair. Leakage is expected through the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

This is substantially the same site as Site M9-5 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970.

POTENTIAL SITE CV-2214

Location: On Roberts Meadow Brook about 300 feet upstream from Kennedy Road in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: $42^{\circ}20'08''$ Longitude: $72^{\circ}44'15''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	2 Houses and barn	538
	Chesterfield Rd. & utilities	518
	Montague Rd. & utilities	510
	Overhead telephone lines	502
	Garage	502

Geologic Conditions: Both abutments are granite gneiss with a thin soil mantle. There is rock outcropping in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

POTENTIAL SITE CV-2214 (cont'd)

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 540, an auxilliary dike will be required.

Public Ownership: Upper Reservoir and the adjacent area is owned by the City of Northampton.

POTENTIAL SITE CV-2215

Location: On an unnamed tributary to the Mill River about 500 feet upstream from Rocky Hill Road in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: 42°18'27" Longitude: 72°39'42"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	High tension lines	235
	High tension lines	230
	High tension line	220

Geologic Conditions: Both abutments are silty sand with gravel, cobbles and boulders. Surficial deposits are englacial drift. Depth to gneiss bedrock in the foundation is estimated to be from 20 to 30 feet. Water-holding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

84

(12) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
(13) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
(14) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
(15) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

*** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. ***

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED MILL RIVER									
BENEFICIAL POOL										EMERGENCY SPILLWAY									
ELEV	STORAGE	AC FT	AREA	COST/AC	DEPTH	AT	CREST	STORAGE	PER	DESIGN	AREA	ELEV	AREA	ELEV	AREA	DESIGN	AREA	ELEV	AREA
(MSL)	AC FT	IN	(\$)	(AC)	(FT)	(MSL)	TYPE	AT CREST	AC FT	(\$)	(MSL)	TYPE	AT CREST	AC FT	(MSL)	(AC)	(MSL)	TYPE	AT CREST
DA= 0.64 SQ MI = 410 AC										USGS QUAD-WILLIAMSBURG									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE-CV-2204										LATITUDE 42-23-55 LONGITUDE 72-42-26									
SITE RATING (1)										RUNOFF = 8.20 IN, PEAK FLOW = 196 CFS									
573.4	0	0.0	3	2090	3.4	587.9	E	142	4.1	1170	20	591.0	20	595.4	25	18	20	595.4	25
585.5	100	2.9	14	14490	15.6	588.0	E	145	4.3	1440	22	592.5	22	596.0	26	20	20	596.0	26
590.0	174	5.1	19	14290	20.0	592.5	E	231	6.8	1190	25	596.5	25	600.0	30	31	31	600.0	30
596.7	323	9.5	25	15230	26.7	599.2	E	395	11.6	980	37	602.4	37	605.5	36	52	52	605.5	36
601.7	472	13.7	34	14570	31.7	604.2	E	572	16.7	880	52	606.8	52	609.8	40	75	75	609.8	40
602.5	499	14.6	37	14110	32.5	605.0	E	606	17.7	870	54	607.2	54	610.2	40	80	80	610.2	40
SITE-CV-2205										LATITUDE 42-24-43 LONGITUDE 72-46-30									
DA= 0.73 SQ MI = 467 AC										USGS QUAD-GOSHEN									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE RATING (1)										RUNOFF = 8.20 IN, PEAK FLOW = 223 CFS									
1172.1	0	0.0	4	1930	2.0	1182.6	E	162	4.1	930	28	1185.9	28	1189.5	19	16	16	1189.5	19
1180.1	100	2.5	20	9430	10.2	1182.6	E	162	4.1	1200	29	1186.8	29	1189.9	20	16	16	1189.9	20
1185.8	235	6.0	28	9410	15.7	1188.3	E	314	8.1	830	40	1191.8	40	1194.8	25	26	26	1194.8	25
1190.1	371	9.5	34	9640	20.2	1192.6	E	474	12.2	690	54	1195.6	54	1198.6	29	36	36	1198.6	29
1192.5	457	11.7	42	8760	22.5	1195.0	E	582	14.8	640	61	1197.3	61	1200.3	30	44	44	1200.3	30
SITE-CV-2206										LATITUDE 42-24-24 LONGITUDE 72-45-05									
DA= 8.84 SQ MI = 5658 AC										USGS QUAD-GOSHEN									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE RATING (1)										RUNOFF = 8.20 IN, PEAK FLOW = 2173 CFS									
737.2	0	0.0	18	8220	7.1	766.8	T	1957	4.1	800	142	777.5	142	787.7	58	223	223	787.7	58
741.3	100	0.2	29	28400	11.3	741.3	T	171	0.4	4820	76	756.2	76	761.2	31	46	46	761.2	31
768.2	2048	4.3	122	13770	38.2	768.2	T	2118	4.5	800	155	783.0	155	788.5	59	236	236	788.5	59
793.8	5943	12.6	183	15020	63.8	793.8	T	6014	12.8	460	219	806.8	219	811.9	82	724	724	811.9	82
820.8	11787	25.0	245	18960	90.8	820.8	T	11857	25.2	390	274	826.5	274	829.9	100	1390	1390	829.9	100

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY SUBWATERSHED MILL RIVER									
BENEFICIAL POOL									
FLEV	STORAGE	COST PER AC FT	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER	DAM	SAFE YIELD
(MSL)	AC FT	IN (\$)	(AC) (AC)	TYPE (MSL)	AC FT	IN (\$)	(MSL) (AC)	(MSL) (AC)	(MGD)
DA= 4.85 SQ MI = 3104 AC USGS QUAD-WILLIAMSBURG									
LATITUDE 42-22-48 LONGITUDE 72-41-13									
RUNOFF = 8.10 IN, PEAK FLOW = 1464 CFS									
SITE-CV-2207									
SITE RATING (1)	0	0.0	15	5.0	430.2	E 1073	4.1	760	27
415.0	0	0.0	15	5.0	430.2	E 1073	4.1	760	27
419.5	100	0.4	6030	29	20870	9.5	422.0	E 241	0.8
425.0	416	1.6	2110	87	10090	15.1	427.5	E 708	2.7
430.4	1048	4.0	1200	152	8250	20.4	430.4	T 1086	4.1
432.5	1414	5.5	1020	201	7180	22.5	432.5	T 1453	5.6
SITE-CV-2208									
SITE RATING (3)	0	0.0	3	25.2	544.5	E 719	6.5	730	61
515.3	0	0.0	3	25.2	544.5	E 719	6.5	730	61
530.3	100	0.8	7180	10	68570	40.3	530.3	T 117	1.1
538.0	316	2.9	2230	45	15640	48.0	548.5	E 1047	9.5
545.0	747	6.8	1190	77	11600	55.0	545.0	T 763	6.8
549.5	1126	10.2	1050	96	12260	59.5	549.5	T 1143	10.3
SITE-CV-2209									
SITE RATING (1)	0	0.0	6	3.9	923.5	E 731	7.6	730	41
893.9	0	0.0	6	3.9	923.5	E 731	7.6	730	41
901.5	100	1.0	5750	18	31750	11.6	901.5	T 114	1.2
916.9	486	5.0	1770	32	27160	26.9	916.9	T 500	5.1
935.6	1257	13.0	960	50	23970	45.7	948.1	E 1995	20.7
948.8	2028	21.0	760	70	22120	58.8	957.3	E 2697	27.9
954.0	2413	25.0	680	78	20900	64.0	960.5	E 2969	30.7
NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.									
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.									
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE									
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.									
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.									
** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **									

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED MILL RIVER									
BENEFICIAL POOL										EMERGENCY SPILLWAY									
										DESIGN									
										HIGH WATER									
ELEV	STORAGE	IN	AC FT	COST PER AC	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	COST PER AC	DESIGN	ELEV	AREA	ELEV	AREA	TOP ELEV	HGT	FILL VOL	PERCENT CHANCE	SAFE	YIELD
(MSL)				(\$)	(FT)	(MSL)	AC FT	IN				(MSL)	(AC)	(MSL)	FT	(1000 CY)			AT 95
SITE-CV-2210										LATITUDE 42-21-06									
DA= 10.70 SQ MI = 6848 AC										LONGITUDE 72-42-37									
STREAM WATER QUALITY (A)										RUNOFF = 8.10 IN, PEAK FLOW = 2828 CFS									
SITE RATING (1)																			
403.1	0	0.0	46		3.0	426.5	E	4451	7.8	280		429.0	296	439.7	40	189			
404.7	100	0.2	13870	71	19480	404.7	T	186	0.3	7480		415.7	205	421.0	21	41			
419.2	2461	4.3	890	240	9070	419.2	T	2547	4.5	860		432.2	311	441.9	42	218			
435.7	7183	12.6	360	326	7940	448.2	E	11721	20.5	220		450.0	398	459.7	60	616			
449.0	11905	20.9	270	392	8310	449.0	T	11991	21.0	270		455.7	438	460.0	60	620			
452.5	13335	23.4	270	415	8540	452.5	T	13420	23.5	260		457.0	446	460.0	60	620			
SITE-CV-2211										LATITUDE 42-21-44									
DA= 1.24 SQ MI = 794 AC										LONGITUDE 72-45-46									
STREAM WATER QUALITY (A)										RUNOFF = 8.10 IN, PEAK FLOW = 374 CFS									
SITE RATING (1)																			
1008.3	0	0.0	2		8.3	1033.5	E	274	4.1	1670		1037.8	33	1043.3	43	92			
1025.4	100	1.5	4500	14	32320	1027.9	E	148	2.2	3050		1034.6	28	1039.1	39	71			
1036.6	359	5.4	1800	32	20370	1039.1	E	451	6.8	1430		1044.6	41	1049.4	49	128			
1050.0	877	13.2	1080	45	21060	1052.5	E	1001	15.1	950		1057.1	51	1061.6	62	231			
1060.5	1394	21.1	850	54	21910	1063.0	E	1554	23.5	760		1066.6	67	1070.6	71	332			
1064.8	1653	25.0	800	63	20840	1067.3	E	1825	27.5	720		1070.8	76	1074.5	74	384			
SITE-CV-2212										LATITUDE 42-21-12									
DA= 1.36 SQ MI = 870 AC										LONGITUDE 72-44-06									
STREAM WATER QUALITY (A)										RUNOFF = 8.10 IN, PEAK FLOW = 411 CFS									
SITE RATING (1)																			
523.2	0	0.0	4		5.1	542.4	E	402	5.5	910		544.8	73	548.0	30	47			
534.3	100	1.4	4440	21	21000	544.8	E	555	7.6	800		546.7	87	549.8	32	53			
537.3	177	2.4	3090	31	17770	537.3	T	188	2.5	2910		545.4	77	549.5	32	53			
539.5	253	3.5	2280	38	15230	539.5	T	264	3.5	2190		545.4	77	550.0	32	54			
542.5	396	5.5	1630	57	11270	542.5	T	407	5.6	1580		547.4	92	550.4	32	58			

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED MILL RIVER															
BENEFICIAL POOL																									
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST/ SURF AC (\$)	DEPTH AT DAM (FT)	CREST ELEV	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER	DAM	SAFE YIELD	ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST/ SURF AC (\$)	DEPTH AT DAM (FT)	CREST ELEV	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER	DAM	SAFE YIELD		
(MSL)	AC FT	IN	(AC)	(\$)	(FT)	(MSL)	AC FT	IN	(MSL)	(AC)	(MGD)	(MSL)	AC FT	IN	(MSL)	(AC)	(MGD)	(MSL)	AC FT	IN	(MSL)	(AC)	(MGD)		
DA= 2.29 SQ MI = 1466 AC										USGS QUAD-EASTHAMPTON															
SITE-CV-2213										SITE-CV-2214															
SITE RATING (2)										SITE RATING (3)															
501.7	0	0.0	12	5150	37	13790	7.1	513.0	E	507	4.1	1000	517.9	82	523.7	25	77	517.9	82	523.7	25	77	517.9	82	523.7
506.0	100	0.8	37	13790	7.1	513.0	E	507	4.1	1000	517.9	82	523.7	25	77	517.9	82	523.7	25	77	517.9	82	523.7	25	77
513.7	534	4.4	71	10680	14.7	516.2	E	738	6.0	1020	522.0	94	527.5	29	108	527.5	29	108	527.5	29	108	527.5	29	108	
523.9	1402	11.5	99	10700	24.9	526.4	E	1678	13.7	630	531.3	123	536.0	37	194	536.0	37	194	536.0	37	194	536.0	37	194	
531.7	2270	18.6	125	11230	32.7	531.7	T	2289	18.7	620	537.2	155	540.2	41	251	540.2	41	251	540.2	41	251	540.2	41	251	
532.5	2365	19.4	129	11290	33.5	532.5	T	2383	19.5	610	537.0	154	540.0	41	247	540.0	41	247	540.0	41	247	540.0	41	247	
DA= 6.11 SQ MI = 3910 AC										USGS QUAD-EASTHAMPTON															
SITE RATING (1)										SITE RATING (1)															
510.2	0	0.0	10	10710	33	32610	14.7	517.3	E	246	0.8	4350	534.2	206	539.5	39	140	534.2	206	539.5	39	140	534.2	206	539.5
514.8	100	0.3	33	32610	14.7	517.3	E	246	0.8	4350	534.2	206	539.5	39	140	534.2	206	539.5	39	140	534.2	206	539.5	39	140
522.0	482	1.5	79	2550	28.0	524.5	E	755	2.3	1630	531.3	176	536.7	37	108	536.7	37	108	536.7	37	108	536.7	37	108	
528.7	1246	3.8	149	10100	28.7	531.2	E	1699	5.1	890	536.0	225	539.9	40	146	539.9	40	146	539.9	40	146	539.9	40	146	
532.5	1890	5.8	188	10670	32.5	532.5	T	1939	6.0	1040	537.0	236	540.0	40	151	540.0	40	151	540.0	40	151	540.0	40	151	
DA= 0.59 SQ MI = 378 AC										USGS QUAD-EASTHAMPTON															
SITE-CV-2215										SITE-CV-2216															
SITE RATING (1)										SITE RATING (1)															
220.6	0	0.0	4	1890	25	7590	8.6	228.6	E	131	4.1	1090	230.7	34	233.7	15	12	230.7	34	233.7	15	12	230.7	34	233.7
227.6	100	3.2	25	1890	25	7590	8.6	228.6	E	131	4.1	1090	230.7	34	233.7	15	12	230.7	34	233.7	15	12	230.7	34	233.7
229.3	151	4.8	30	1450	30	7190	10.3	231.8	E	240	7.6	910	232.5	39	235.5	17	15	232.5	39	235.5	17	15	232.5	39	235.5
231.0	201	6.4	35	1230	35	7120	12.0	233.5	E	301	9.6	820	234.2	43	237.2	18	18	234.2	43	237.2	18	18	234.2	43	237.2
232.3	252	8.0	38	1090	38	7120	13.3	234.8	E	361	11.5	760	235.8	48	238.8	20	22	235.8	48	238.8	20	22	235.8	48	238.8

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.
 ** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

EXISTING SITE CV-2206 (Graham Pond)

Location: On the Mill River about 800 feet upstream from Village Hill Road in Williamsburg, Mass.

Goshen, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>732</u>	<u>74</u>	<u>18</u>	<u>5,650 8.83</u>

Potential for Expansion: Please refer to Site Data and Design Summary Table for Potential Site CV-2206 for details.

Remarks: The dam is a rock masonry structure about 40 feet long with a concrete weir located in the center. The concrete in the weir and sidewalls is cracked and ravelling.

Ownership and Use: The pond is owned by Margaret, Thomas and Robert Hodgkins and is used for recreation.

EXISTING SITE CV-2210

Location: On Roberts Meadow Brook about 1,600 feet upstream from Reservoir Road in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>402</u>	<u>25</u>	<u>27</u>	<u>6,800 10.63</u>

Potential for Expansion: Please refer to Site Data and Design Summary Table for Potential Site CV-2210 for details.

Remarks: The dam is a rock masonry structure about 200 feet long with a 40-foot wide ogee weir section. A gate house is located near the right abutment.

Ownership and Use: The reservoir is owned by the city of Northampton and is used for a water supply.

EXISTING SITE CV-2220 (Highland Lakes-Upper)

Location: On the West Branch of the Mill River about 300 feet upstream from Moore Hill Road in Goshen, Mass.

Goshen, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>1,442</u>	<u>61</u>	<u>15</u>	<u>600 0.94</u>

Potential for Expansion: The relatively small drainage area limits expansion potential.

Remarks: The dam is an earthfill structure about 500 feet long with a 10-foot top width. Both the upstream and downstream slopes are vegetated and appear well maintained. The outlet is a rock channel on the right abutment.

Ownership and Use: The lake is owned by the Commonwealth of Massachusetts, Department of Natural Resources and is used for recreation.

EXISTING SITE CV-2221 (Highland Lakes-Lower)

Location: On the West Branch of the Mill River about 150 feet upstream from East Street in Goshen, Mass.

Goshen, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>1,401</u>	<u>94</u>	<u>18</u>	<u>1,100 1.72</u>

Potential for Expansion: The relatively small drainage area limits expansion potential. Many cottages surround the lake.

Remarks: The dam is an earthfill structure about 550 feet long with an 8-foot top width. The upstream and downstream slopes are vegetated. The principal spillway is a concrete drop-structure, 40 feet wide and 3 feet deep with provisions for stoplogs.

Ownership and Use: The lake is owned by the Commonwealth of Massachusetts, Department of Natural Resources and is used for recreation.

EXISTING SITE CV-2222 (Mountain Street Reservoir)

Location: On Beaver Brook about 100 feet upstream from Rocks Road in Williamsburg, Mass.

Williamsburg, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)	
<u>459</u>	<u>67</u>	<u>12</u>	<u>500</u>	<u>0.78</u>

Potential for Expansion: The small drainage area limits expansion potential. Steep topography limits any significant increase in surface area or storage.

Remarks: The dam is an earthfill structure about 2,000 feet long with a 6-foot top width. The upstream slope is vegetated above the water line and riprapped below. The downstream slope is vegetated. The principal spillway is gated. The emergency spillway is a 12-foot wide concrete drop structure with provisions for flashboards. Depth of the weir is 1 foot 4 inches.

Ownership and Use: The reservoir is owned by the city of Northampton and is used for water supply.

EXISTING SITE CV-2223 (Fuller Pond)

Location: On an unnamed tributary to Beaver Brook about 700 feet upstream from Mountain Street in Williamsburg, Mass.

Williamsburg, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)	
<u>433</u>	<u>3</u>	<u>5</u>	<u>100</u>	<u>0.16</u>

Potential for Expansion: The small drainage area limits the potential for expansion.

Remarks: The dam is an earthfill structure about 150 feet long with a 6-foot top width. The principal spillway is a 6-foot wide rock weir structure having a maximum depth of 2 feet.

Ownership and Use: The pond is privately owned and is used for recreation.

EXISTING SITE CV-2224 (Unquomonk Reservoir)

Location: On Unquomonk Brook about 3,300 feet upstream from South Street in Williamsburg, Mass.

Williamsburg, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>822</u>	<u>5</u>	<u>20</u>	<u>650 1.02</u>

Potential for Expansion: Steep topography limits any significant increase in surface area and storage.

Remarks: The dam is a concrete structure about 75 feet long with a 20-foot wide drop-structure in the center. A gate house is located to the left of the spillway.

Ownership and Use: The reservoir is owned by the town of Williamsburg and is used for water supply.

EXISTING SITE CV-2225 (Brass Mill Pond)

Location: On the Mill River near the intersection of Mountain Street and Route 9 in Williamsburg, Mass.

Williamsburg, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>439</u>	<u>10</u>	<u>20</u>	<u>48,850</u>

Potential for Expansion: Limited; an urban area and Route 9 are adjacent to the pond.

Remarks: The dam is a rock masonry drop-structure about 125 feet long. The right abutment is wooded while the left abutment is tied into an abandoned factory.

Ownership and Use: The pond is owned by Augie Woicekowski and has no specific use at the present time.

EXISTING SITE CV-2226 (Upper Reservoir)

Location: On Roberts Meadow Brook about 2,600 feet downstream from Chesterfield Road in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
451	6	35	5,600 8.75

Potential for Expansion: Raising the existing water level by 50 feet would provide about 70 acres of water surface. Chesterfield Road would be affected.

Remarks: The dam is an earthfill structure about 125 feet long with a 10-foot top width. The principal spillway is a 40-foot wide weir with a depth of 4.5 feet.

Ownership and Use: The reservoir is owned by the city of Northampton and is used for a water supply.

EXISTING SITE CV-2227 (Florence Pond)

Location: On an unnamed tributary to the Mill River about 2,500 feet upstream from Spring Street in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
265	5	4	300 0.47

Potential for Expansion: The relatively small drainage area limits the potential for expansion. Steep topography limits any significant increase in surface area.

Remarks: The dam is an earthfill structure about 125 feet long with a 3-foot top width. The upstream face is a vertical concrete wall and the downstream slope is wooded. The spillway is a 9-foot wide concrete chute structure with an inlet depth of 1 foot. The concrete in the spillway is cracked and spalling.

Ownership and Use: The pond is owned by Pauline A. Misterka and has no specific use at the present time.

EXISTING SITE CV-2228 (Paradise Pond)

Location: On the Mill River about 1,300 feet upstream from Route 66 in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>135</u>	<u>16</u>	<u>16</u>	<u>35,350 55.23</u>

Potential for Expansion: Limited; the Smith College Campus surrounds the pond.

Remarks: The dam is a rock masonry weir structure about 150 feet long with provisions for 2 feet of flashboards. The concrete in the sidewall of the left abutment is cracking.

Ownership and Use: The pond is owned by Smith College and is used for recreation.



CV-2206
Graham Pond



CV-2222
Mountain St. Reservoir



CV-2210
Roberts Meadow
Reservoir



CV-2223
Fuller Pond



CV-2221
Highland Lakes - Lower

EXISTING RESERVOIRS
SUBWATERSHED CV-22
MILL RIVER





CV-2224
Unquomunk Reservoir



CV-2227
Florence Pond



CV-2225
Brass Mill Pond



CV-2228
Paradise Pond



CV-2226
Upper Reservoir

EXISTING RESERVOIRS
SUBWATERSHED CV-22
MILL RIVER



MILL RIVER (CV-22)
CENTRAL CONNECTICUT VALLEY STUDY AREA
MASSACHUSETTS
EXISTING AND POTENTIAL RESERVOIR SITES
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE



LEGEND

- WATERSHED BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- EXISTING POND OR RESERVOIR

SOURCE: USGS Quadrangles

Easthampton - 1964
Williamsburg - 1964
Goshen - 1972
Westhampton - 1972
Mt. Holyoke - 1964



CENTRAL CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed CV-23, Broad Brook

The Broad Brook subwatershed covers about 7,500 acres in Holyoke in Hampden County; and Easthampton and Southampton in Hampshire County.

The major stream is Broad Brook which originates in Holyoke and flows through Easthampton to its confluence with the Manhan River.

Geology of the potential reservoir sites is characterized by outwash sand and gravel underlain by triassic sandstone or basalt bedrock.

A PL-566 Watershed Work Plan has been developed and approved for the Broad Brook Watershed. Inability of local sponsors to obtain the necessary land rights for two reservoir sites has resulted in suspension of all activities under PL-566.

Three potential reservoir sites and three existing reservoirs were studied in the inventory.

POTENTIAL SITE CV-2303

Location: On Broad Brook about 300 feet upstream from Pomeroy Street in Eastampton, Mass.

Mt. Tom, Mass. USGS quadrangle

Latitude: $42^{\circ}13'29''$ Longitude: $72^{\circ}40'17''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	3 Houses	245
	East St. & utilities	242
	4 Houses	240
	High tension lines	238
	House and garage	238
	Dairy barn and house	234
	Southampton Rd. & utilities	233
	House	233
	Cook Rd. & utilities	232
	House	230
	High pressure gas line	228

Geologic Conditions: Both abutments outwash sand or gravel. Surficial deposits are swamp and outwash sand and gravel. Depth to triassic sandstone bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2304

Location: On Broad Brook approximately 100 feet upstream from Cherry Street in Holyoke, Mass.

Mt. Tom, Mass. USGS quadrangle

Latitude: $42^{\circ}12'40''$ Longitude: $72^{\circ}39'40''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	YMCA Camp	510

POTENTIAL SITE CV-2304 (cont'd)

Geologic Conditions: Both abutments are outwash sand and gravel. Surficial deposits are outwash sand and gravel and basalt bedrock outcrops. Depth to triassic basalt bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2305

Location: On Broad Brook approximately 1,600 feet upstream from Southampton Road in Holyoke, Mass.

Mt. Tom, Mass. USGS quadrangle

Latitude: 42°12'22" Longitude: 72°40'57"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	County Rd. & utilities	275
	Rock Valley Road	275
	Cemetery	275
	3 Houses	275
	House	273
	House	272
	3 Houses	270
	2 Houses and a barn	260
	House	250
	House	245
	Keyes Rd., & utilities	238

Geologic Conditions: Both abutments outwash sand and gravel. Surficial deposits are swamp and outwash sand and gravel. Depth to triassic sandstone bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and possibly through the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

[illegible]

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.

- (1) COSTS ARE BASED ON TYPE SECTION CRITERIA AND COST DATA.
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

*** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. ***

EXISTING SITE CV-2310 (Lower Mill Pond)

Location: On Broad Brook at Ferry Street in Easthampton, Mass.

Easthampton, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)	
<u>129</u>	<u>35</u>	<u>10</u>	<u>7,450</u>	<u>11.64</u>

Potential for Expansion: Limited; the pond is located in an industrial area.

Remarks: The dam is part of the Ferry Street highway embankment. The spillway is a combination concrete drop and chute structure with a weir depth of 5 feet. The spillway has 3 gates for control. The concrete in the spillway and in the control gates is cracking.

Ownership and Use: The pond is owned by Industrial Properties of Easthampton, Inc., and is used for industrial purposes.

EXISTING SITE CV-2311 (Nashawannuck Pond)

Location: On Broad Brook at State Route 141 in Easthampton, Mass.

Easthampton, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)	
<u>150</u>	<u>37</u>	<u>20</u>	<u>6,300</u>	<u>9.84</u>

Potential for Expansion: Limited; the dam is located in an industrial-residential area.

Remarks: The dam is part of the State Route 141 highway embankment. The principal spillway is a 40-foot wide bascule gate with a minimum depth of 8 feet.

Ownership and Use: The pond is owned by the town of Easthampton. The water rights are owned by the Easthampton Rubber Thread Co., and the water is used for industrial purposes.

EXISTING SITE CV-2312 (Rubber Thread Pond)

Location: On Wilton Brook at Williston Avenue in Easthampton, Mass.
 Easthampton, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>150</u>	<u>8</u>	<u>10</u>	<u>800 1.25</u>

Potential for Expansion: Limited; the pond is located in an industrial area.

Remarks: The dam is an earthfill structure about 300 feet long formed by the embankment of Williston Avenue. The principal spillway inlet was not visible. The outlet is a 12-inch corrugated metal pipe with a concrete headwall and wingwalls. The spillway outlets into Nashawannuck Pond.

Ownership and Use: The pond is owned by the Easthampton Rubber Thread Co. and is used for industrial purposes.

BROAD BROOK (CV-23)

CENTRAL CONNECTICUT VALLEY STUDY AREA
MASSACHUSETTS

EXISTING AND POTENTIAL RESERVOIR SITES

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE



2303

2302

2301

2312

2310

2311

2304

2305

LEGEND

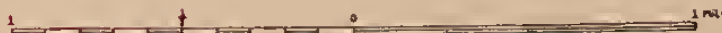
SUBWATERSHED BOUNDARY

DRAINAGE AREA
ABOVE STRUCTURE

POTENTIAL SITE SHOWING
BENEFICIAL POOL FOR
LARGEST STRUCTURE

EXISTING RESERVOIR
OR POND

Source - USGS Quad. Sheets
Mt. Tom - 1958
Easthampton - 1948





CENTRAL CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed CV-24, Manhan River

The Manhan River Subwatershed covers about 47,700 acres in Holyoke, Montgomery, and Westfield in Hampden County; and Chesterfield, Easthampton, Huntington, Northampton, Southampton, and Westhampton in Hampshire County.

The major stream is the Manhan River which originates in Westhampton and flows southerly through Southampton to the Westfield city line where it turns and flows northeasterly to the Connecticut River in Easthampton.

Geology of the potential reservoir sites is characterized by glacial outwash and till underlain by triassic conglomerate and schist bedrock.

Nineteen potential reservoir sites and six existing reservoirs were studied.

POTENTIAL SITE CV-2401

Location: On North Branch of Manhan River about 600 feet downstream from Northwest Road in Westhampton, Mass.

Westhampton, Mass. USGS quadrangle

Latitude: 42°20'12" Longitude: 72°47'25"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	House and barn	1100
	Northwest Road & utilities	1096
	Kings Road and utilities	1015

Geologic Conditions: Both abutments and surficial deposits are silty sand with gravel, cobbles, and boulders (glacial till). Depth to schist bedrock in the foundation is estimated to be from 10 to 20 feet. Water-holding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2402

Location: On an unnamed tributary to the North Branch of the Manhan River about 5,400 feet upstream from Kings Highway in Westhampton, Mass.

Westhampton, Mass. USGS quadrangle

Latitude: 42°19'24" Longitude: 72°47'46"

Facilities	Facility	Elevation
Affected:	Cabin, surrounding buildings and swimming pool	1190
	Unimproved road and utilities	1140

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Surficial deposits are glacial till and sand and gravel with some cobbles and boulders (englacial drift or moraine). Depth to schist bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2404

Location: On the Manhan River about 3,600 feet upstream from Main Road in Westhampton, Mass.

Westhampton, Mass. USGS quadrangle

Latitude: 42°17'45" Longitude: 72°48'50"

Facilities Affected: None below elevation 1191

Geologic Conditions: The left abutment is sand and gravel with cobbles and boulders (englacial drift). The right abutment is cobbles and boulders with subsurface streams. Both abutments are shallow to schist bedrock. Surficial deposits are englacial drift, boulder deposits, and schist bedrock. Depth to schist bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2405

Location: On Manhan River about 75 feet upstream from Main Road in Westhampton, Mass.

Westhampton, Mass. USGS quadrangle

Latitude: 42°17'13" Longitude: 72°48'26"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Rhodes Rd.	990

Geologic Conditions: Both abutments are schist bedrock, moderately to highly fractured, with quartz and pegmatite veins and some open fractures or solution channels in highly weathered friable zones. Surficial deposits are schist bedrock, glacial till, and glacial outwash. Depth to bedrock in the foundation is estimated to be less than 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2406

Location: On Sodom Brook about 2,600 feet upstream from Southampton Road in Westhampton, Mass.

Westhampton, Mass. USGS quadrangle

Latitude: 42°17'49" Longitude: 72°46'10"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Sugar House	595
	House	595
	3 Houses	590
	2 Houses and dairy barn	585
	2 Houses	580
	House	578
	2 Houses and barn	575
	4 Houses, dairy barn, camping area	570
	South Road and utilities	560
	State Route 66 and utilities	555
	Cemetery Rd. and utilities	550

POTENTIAL SITE CV-2406 (cont'd)

Geologic Conditions: The left abutment is sand and gravel (glacial outwash). The right abutment is cobbles and boulders (glacial drift). Surficial deposits are glacial outwash and englacial drift. Depth to schist bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and possibly through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2407

Location: On the Manhan River about 6,100 feet downstream from Main Road in Westhampton, Mass.

Westhampton, Mass. USGS quadrangle

Latitude: 42°16'21" Longitude: 72°47'49"

Facilities Affected: None below elevation 908

Geologic Conditions: Both abutments are schist and granite bedrock. Granite outcrops in the streambed. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2408

Location: On an unnamed tributary to Parsons Brook about 1,500 feet upstream from Sylvester Road in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: $42^{\circ}19'25''$ Longitude: $72^{\circ}43'16''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	2 Houses	380
	House and barn	375
	3 Houses and sheds	370
	Sylvester Road	365
	House	360
	House	350

Geologic Conditions: Both abutments and the foundation are granite gneiss with soil and boulder cover. Waterholding capabilities appear to be good. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2409

Location: On Parsons Brook about 600 feet upstream from Ryan Road in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: $42^{\circ}18'37''$ Longitude: $72^{\circ}42'55''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	2 Houses and barn	355
	3 Houses and barn	350
	House	348
	House	345
	House	342
	House	340
	8 Houses, barn, swimming pool	335
	2 Houses	330
	House	325
	House	320
	Sylvester Road and utilities	315

POTENTIAL SITE CV-2409 (cont'd)

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (englacial drift) and shallow to bedrock. Surficial deposits are outwash sand and gravel and englacial drift. Depth to gneiss bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be fair. Leakage is expected through the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2410

Location: On Hannum Brook about 3,300 feet upstream from Clark Lane in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: 42°17'31" Longitude: 72°42'30"

Facilities Affected: None below elevation 257

Geologic Conditions: Both abutments are outwash sand and gravel possibly underlain by lacustrine silt at brook elevation. Surficial deposits are swamp and outwash sand and gravel. Depth to triassic sandstone conglomerate bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2411

Location: On Blue Meadow Brook about 400 feet upstream from Delisle Road in Southamptn, Mass.

Woronoco, Mass. USGS quadrangle

Latitude: 42°14'20" Longitude: 72°46'27"

Facilities Affected: None below elevation 637

Geologic Conditions: Both abutments and surficial deposits are silty sand with gravel, cobbles, and boulders (glacial till). Depth to granite or schist bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2412

Location: On the North Branch of the Manhan River about 1,350 feet upstream of Torrey Street in Easthampton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: 42°16'35" Longitude: 72°43'19"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	285
	Loudville Rd. and utilities	282

Geologic Conditions: Both abutments and surficial deposits are outwash sand and gravel underlain by thinly bedded lacustrine sediments. Depth to triassic sandstone or conglomerate bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be fair. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2413

Location: On Sacket Brook about 400 feet upstream from Southampton Road in Montgomery, Mass.

Woronoco, Mass. USGS quadrangle

Latitude: 42°12'40" Longitude: 72°47'35"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Southampton Road	710

Geologic Conditions: The left abutment is schist bedrock. The right abutment is silty sand with gravel, cobbles, and boulders (glacial till); shallow to bedrock. Surficial deposits are glacial till and bedrock. Depth to schist bedrock in the foundation is estimated to be less than 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2414

Location: On an unnamed tributary to the North Branch of the Manhan River about 400 feet downstream from Miller Ave. in Southampton.

Easthampton, Mass. USGS quadrangle

Latitude: 42°15'39" Longitude: 72°42'40"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Glendale Road	250
	Miller Avenue	225

Geologic Conditions: Both abutments are outwash sand and gravel. Surficial deposits are swamp and outwash sand and gravel. Depth to triassic sandstone and shale bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2415

Location: On the North Branch of the Manhan River about 1,200 feet upstream of Pomeroy Meadow Road in Easthampton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: $42^{\circ}16'09''$ Longitude: $72^{\circ}41'59''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	2 Tobacco sheds	195
	House	193
	House	192
	3 Houses, barn & industrial building	190
	2 Houses, 2 farm buildings	185
	Torrey Rd. & utilities	182
	House	182
	Pavilion and buildings	180
	Miller Avenue	168

Geologic Conditions: Both abutments are outwash sand and gravel underlain by thinly bedded lacustrine deposits. Depth to triassic, sandstone, and shale bedrock in the foundation is estimated to be 60 to 80 feet. Waterholding capabilities appear to be fair to poor. Leakage is expected through both abutments and possibly through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2416

Location: On Alder Meadow Brook about 3,500 feet downstream from Fomer Road in Southamton, Mass.

Woronoco, Mass. USGS quadrangle

Latitude: $42^{\circ}12'57''$ Longitude: $72^{\circ}45'38''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Fomer Road	345

POTENTIAL SITE CV-2416 (cont'd)

Geologic Conditions: Both abutments and surficial deposits are silty sand with gravel, cobbles and boulders (glacial till). Depth to schist bedrock in the foundation is estimated to be less than 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location. See existing Site CV-2416 for data on the existing dam and reservoir at this site.

This is substantially the same site as Site M10A-3 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970.

POTENTIAL SITE CV-2417

Location: On the Manhan River about 1,100 feet upstream from it's confluence with the North Branch on the border of the towns of Easthampton and Southamton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: 42°15'45" Longitude: 72°41'54"

Facilities Affected:	Facility	Elevation
	House	152
	2 Houses	155
	Riverdale Rd. & utilities	145
	State Route 10 & utilities	145

Geologic Conditions: Both abutments are outwash sand and gravel, possibly underlain by thinly bedded lacustrine deposits. Surficial deposits are swamp, lacustrine deposits and outwash sand and gravel. Depth to triassic sandstone and shale conglomerate bedrock is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be fair to poor. Leakage is expected through both abutments and possibly through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2418

Location: On an unnamed tributary to the Manhan River about 100 feet upstream from Easthampton Road in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

Latitude: $42^{\circ}17'25''$ Longitude: $72^{\circ}39'37''$

Facilities Affected: None below elevation 175

Geologic Conditions: Both abutments are outwash sand and gravel possibly underlain by thinly bedded lacustrine deposits. Depth to triassic sandstone and shale bedrock in the foundation is estimated to be from 40 to 50 feet. Waterholding capabilities appear to be fair. Leakage is expected through both abutments and possibly through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2419

Location: On Moose Brook approximately 1,200 feet upstream from the confluence with the Manhan River in Southampton, Mass.

Mt. Tom, Mass. USGS quadrangle

Latitude: $42^{\circ}13'07''$ Longitude: $72^{\circ}43'28''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	212
	House	210
	Valley Road	207
	House	200
	2 Houses	190
	Relocated Route 10	188
	Golf Course	185
	Moose Brook Rd., & utilities	170
	Brickyard Rd., & utilities	167

POTENTIAL SITE CV-2419 (cont'd)

Geologic Conditions: Both abutments are outwash sand or gravel possibly underlain by bedded lacustrine deposits. Depth to triassic sandstone and shale bedrock in the foundation is estimated to be from 40 to 50 feet. Waterholding capabilities appear to be fair. Leakage is expected through both abutments and possibly through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. An auxiliary dike is required to the southwest of the left abutment.

POTENTIAL SITE CV-2420

Location: On Moose Brook about 1,400 feet upstream from Moose Brook Road in Southampton, Mass.

Mt. Tom, Mass. USGS quadrangle

Latitude: 42°12'40" Longitude: 72°43'25"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Whiteloaf Road	228
	Strong Road and utilities	228
	3 Houses, barn and garage	228
	Cottage	215
	Valley Road and utilities	207
	Golf Course	185

Geologic Conditions: Both abutments are outwash sand and gravel, possibly underlain by thinly bedded lacustrine deposits. Depth to triassic sandstone or shale bedrock in the foundation is estimated to be from 40 to 50 feet. Waterholding capabilities appear to be fair. Leakage is expected through both abutments and possibly through the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

STUDY AREA-CENTRAL CONNECTICUT VALLEY SUBWATERSHED MANHAN RIVER

ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST/ SURF AC	DEPTH AT DAM	* CREST * ELEV ** TYPE	STORAGE AT CREST	COST PER AC FT	* *	ELEV (MSL)	AREA (AC)	* *	TUP * ELEV * (MSL)	HGT FT	FILL VOL (1000 CY)	*PERCENT *CHANCE
(MSL)	AC FT	IN		(\$)	(FT)	(MSL)	AC FT	IN	(\$)							

SITE-CV-2401																

SITE RATING (1)																

DA= 0.87 SQ MI = 557 AC																
USGS QUAD-WESTHAMPTON																

STREAM WATER QUALITY (B) 100-YR PRIN SPWY DESIGN STORM																

LATITUDE 42-20-12																
LONGITUDE 72-47-25																

RUNOFF = 8.10 IN, PEAK FLOW = 263 CFS																

SITE-CV-2402										USGS QUAD-WESTHAMPTON										LATITUDE 42-19-24										LONGITUDE 72-47-46									
DA= 1.01 SQ MI = 646 AC										100-YR PRIN SPWY DESIGN										STORM RUNOFF = 8.10 IN, PEAK FLOW = 305 CFS																			
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN										STORM RUNOFF = 8.10 IN, PEAK FLOW = 305 CFS																			
SITE RATING (1)										100-YR PRIN SPWY DESIGN										STORM RUNOFF = 8.10 IN, PEAK FLOW = 305 CFS																			
1078.6	0	0.0	2	8.6	* 1100.9	E	280	6.0	1450	*	1103.1	26	*	1106.6	37	*	0.21	47	*	0.21	59	*	0.21	84	*	0.40	161	*	0.64	230	*	0.75	275	*	0.79				
1091.9	100	2.2	4880	14	33920	21.9	*	1104.4	E	368	7.8	1330	*	1106.6	29	*	1110.0	40	*	0.21	59	*	0.21	84	*	0.40	161	*	0.64	230	*	0.75	275	*	0.79				
1101.1	277	6.0	2200	24	25390	31.0	*	1109.6	E	519	11.2	1170	*	1111.9	34	*	1115.0	45	*	0.21	59	*	0.21	84	*	0.40	161	*	0.64	230	*	0.75	275	*	0.79				
1113.1	630	13.6	1390	35	25000	43.0	*	1119.6	E	883	19.0	990	*	1121.8	43	*	1125.3	55	*	0.21	59	*	0.21	84	*	0.40	161	*	0.64	230	*	0.75	275	*	0.79				
1122.1	983	21.2	1070	43	24330	52.0	*	1126.6	E	1193	25.7	880	*	1129.0	50	*	1132.1	62	*	0.21	59	*	0.21	84	*	0.40	161	*	0.64	230	*	0.75	275	*	0.79				
1126.0	1160	25.0	1000	47	24660	56.0	*	1130.5	E	1387	29.9	830	*	1132.8	53	*	1135.9	66	*	0.21	59	*	0.21	84	*	0.40	161	*	0.64	230	*	0.75	275	*	0.79				

[illegible][illegible]

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED MANHAN RIVER																																																	
BENEFICIAL PCOL										EMERGENCY SPILLWAY										DESIGN HIGH WATER										DAM										SAFE YIELD																			
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									
*****										*****										*****										*****										*****										*****									

[illegible]

(1) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(2) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED MANHAN RIVER									
BENEFICIAL POOL																			
* EMERGENCY SPILLWAY					* DESIGN					* DAM									
* HIGH WATER					* TOP					* FILL									
* ELEV					* ELEV					* HGT									
* TYPE					* AREA					* VOL									
* (MSL)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									
* (FT)					* (MSL)					* (MGD)									
* (AC)					* (AC)					* (CY)									

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED MANHAN RIVER																	
BENEFICIAL POOL																											
ELEV	STORAGE	COST PER AC FT	AREA	CUST/ SURF AC	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT	DESIGN HIGH WATER	DAM	SAFE YIELD																
(MSL)	AC FT IN	(\$)	(AC)	(\$)	(FT)	+	TYPE	AC FT	(MSL)	(AC)	(MGD)																
SITE-CV-2416																											
SITE RATING (1)																											
331.6	0	0.0	7	7360	1.6	340.1	E	232	4.1	830	343.1	52	346.6	17	12	0.23											
336.7	100	1.7	31	6260	6.8	339.2	E	201	3.5	1140	343.2	52	346.6	17	12	0.52											
342.9	365	6.5	51	6620	12.8	345.4	E	508	9.1	630	348.7	62	352.0	22	24	0.70											
347.7	631	11.3	60	6620	17.7	350.2	E	794	14.2	500	353.2	71	356.2	26	36	0.83											
351.9	896	16.0	68	6910	21.9	354.4	E	1080	19.2	430	356.9	78	359.9	30	49												
SITE RATING (3)																											
SITE-CV-2417																											
SITE RATING (1)																											
144.8	100	0.1	9550	108	8870	11.8	144.8	T	390	0.2	2450	155.8	290	159.3	26	30	0.87										
147.3	432	0.2	2390	154	6740	14.3	147.3	T	723	0.4	1430	156.3	299	159.8	27	31	1.72										
149.3	765	0.4	1410	189	5700	16.2	149.3	T	1055	0.5	1020	156.3	298	159.3	26	30	2.70										
152.3	1430	0.7	870	239	5230	19.4	152.3	T	1720	0.8	720	157.3	315	160.3	27	35	4.28										
152.5	1448	0.7	870	240	5230	19.5	152.5	T	1738	0.8	720	157.5	316	160.5	27	35	4.34										
SITE-CV-2418																											
SITE RATING (1)																											
150.3	0	0.0	2	14560	3.4	163.0	E	128	4.1	1470	165.3	26	168.3	21	25	0.18											
161.7	100	3.2	2480	17	10830	14.7	166.2	E	205	6.6	1210	168.3	34	171.3	24	33	0.26										
165.3	177	5.6	1600	26	9970	18.2	167.8	E	255	8.3	1110	170.2	38	173.2	26	39	0.33										
167.8	254	8.2	1280	33	9970	20.9	170.3	E	347	11.2	940	172.8	43	175.8	29	48	0.37										
170.2	331	10.7	1090	38	9510	23.2	172.7	E	437	14.1	830	174.8	46	177.8	31	56											

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED MANHAN RIVER									
BENEFICIAL PCOL																			

EXISTING SITE CV-2416 (Alder Pond)

Location: On Alder Meadow Brook about 3,500 feet downstream from Fomer Road in Southamptn, Mass.

Woronoco, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
--	10	--	700 1.09

Potential for Expansion: Please refer to Site Data and Design Summary Table for Potential Site CV-2416 for details.

Remarks: The dam is an earthfill structure with a corrugated metal pipe principal spillway and a vegetated emergency spillway.

Ownership and Use: The pond is owned by Edward C. Searle, and is used as a farm pond.

EXISTING SITE CV-2425 (Pine Island Lake)

Location: On a tributary of the North Branch of the Manhan River about 50 feet upstream from Reservoir Road in Westhampton, Mass.

Westhampton, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
998	60	15 est.	450 0.70

Potential for Expansion: The small drainage area limits expansion potential. Many cottages line the shore.

Remarks: The dam is an earthfill structure about 75 feet long. Both the downstream and upstream slopes are vegetated with some rock riprap on the downstream slope. The spillway is two 36-inch corrugated metal pipes. To the left of these pipes is a 34-inch pipe, 5.5 feet below water level and a 10-inch pipe at the base of the dam that are probably used to drain the lake.

Ownership and Use: The lake is owned by the Pine Island Lake Association and is used for recreation.

EXISTING SITE CV-2426 (Clear Falls Pond)

Location: On the North Branch of the Manhan River about 200 feet downstream from Drury Lane in Northampton, Mass.

Easthampton, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
358 est.	1	8 est.	9,550 14.92

Potential for Expansion: Expansion is possible, however, the existing recreation area and facilities would be inundated with other roads and buildings. Raising the existing water level by about 30 feet would provide about 30 acres of water surface. Five houses, Easthampton Road, and Drury Lane would be affected.

Remarks: The dam is an irregular shaped concrete drop-structure about 300 feet long, that outlets on a bedrock channel. There are cracks in the concrete in the dam.

Ownership and Use: The pond is owned by Samuel Crescione and Alfred Dufour and is used for recreation.

EXISTING SITE CV- 2427 (White Reservoir)

Location: On the Manhan River about 100 feet upstream from Manhan Road in Southampton, Mass.

Westhampton, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
708	116	15	2,950 4.61

Potential for Expansion: Raising the existing water level by about 20 feet would provide about 250 acres of water surface. Fomer Road would be affected.

Remarks: The dam is an earthfill structure about 400 feet long with a 9-foot top width. The upstream face of the dam is a 1-foot thick vertical, concrete wall, while the downstream is sloped and vegetated. The spillway is a concrete drop chute. The water elevation can be raised by inserting stoplogs in the weir. Concrete in the spillway weir is spalling. A gate house is located in the center of the dam.

Ownership and Use: The reservoir is owned by the Board of Commissioners, Holyoke Water Works and used for municipal water supply.

EXISTING SITE CV-2428 (New Intake Reservoir)

Location: On the Manhan River about 1,200 feet upstream from Fomer Road in Southamton, Mass.

Woronoco, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
505 est.	2	14	3,464 5.41

Potential for Expansion: Expansion is possible, but the narrow steep valley limits significant increase in storage.

Remarks: The dam is a concrete gravity structure about 65 feet long. There is a gate house on the right abutment that is not in use. The concrete side walls of the dam are spalling.

Ownership and Use: The reservoir is owned by the Board of Water Commissioners, Holyoke Water Works, and is used for municipal water supply.

EXISTING SITE CV-2429 (Tighe Carmody Reservoir)

Location: On the Manhan River at Manhan Road in Southamton, Mass.

Woronoco, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
478	358	100 est.	9,200 14.38

Potential for Expansion: It appears that the water level could be raised at least 100 feet without affecting facilities other than New Intake Reservoir and Fomer Road. Steep topography limits the increase in storage volume.

Remarks: The dam is an earthfill structure with a 20-foot paved road across the top. The spillway is a concrete ogee section at the left of the dam. The upstream slope of the dam is riprapped while the downstream slope is vegetated.

Ownership and Use: The reservoir is owned by the Board of Commissioners, Holyoke Water Works, and is used for municipal water.



CV-2425
Pine Island Lake



CV-2428
New Intake Reservoir



CV-2426
Clear Falls Pool



CV-2427
White Reservoir



CV-2429
Tighe Carmody
Reservoir

EXISTING RESERVOIRS
SUBWATERSHED CV-24
MANHAN RIVER

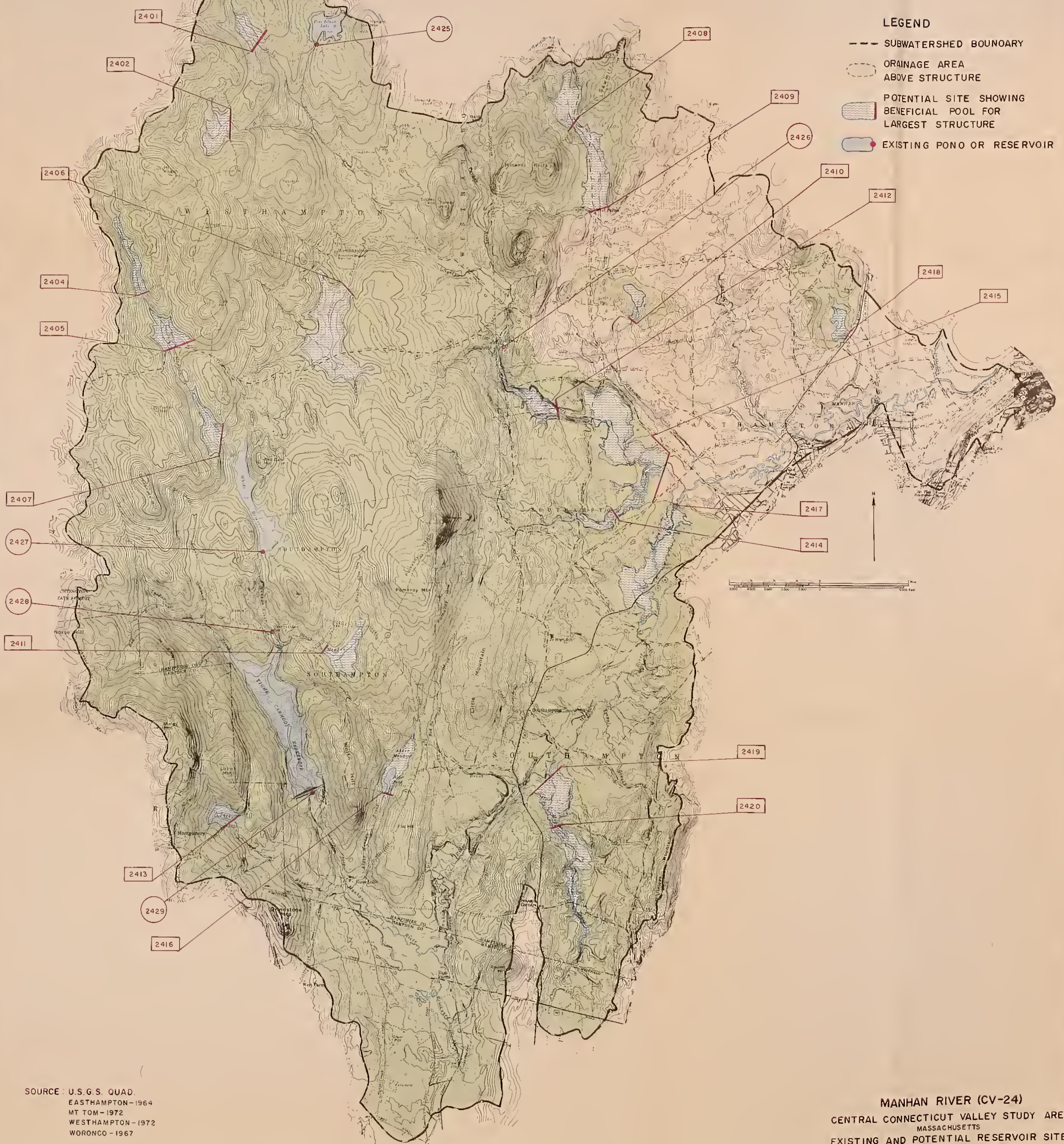






LEGEND

- SUBWATERSHED BOUNOARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- EXISTING PONO OR RESERVOIR



SOURCE: U.S.G.S. QUAD.
EASTHAMPTON-1964
MT TOM-1972
WESTHAMPTON-1972
WORONCO-1967

MANHAN RIVER (CV-24)
CENTRAL CONNECTICUT VALLEY STUDY AREA
MASSACHUSETTS
EXISTING AND POTENTIAL RESERVOIR SITES
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

CENTRAL CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed CV-25, Bachelor Brook

The Bachelor Brook subwatershed covers about 21,100 acres in Belchertown, Granby, and South Hadley in Hampshire County.

The major stream is Bachelor Brook which originates in Belchertown and flows westerly through Granby and South Hadley to the Connecticut River.

Geology of the potential reservoir sites is characterized by outwash sand and gravel underlain by triassic conglomerate bedrock.

Seven potential reservoir sites and four existing reservoirs were studied.

POTENTIAL SITE CV-2501

Location: On an unnamed tributary to Bachelor Brook about 4,300 feet upstream from Bachelor Street in Granby, Mass.

Mt. Holyoke, Mass. USGS quadrangle

Latitude: 42°17'32" Longitude: 72°31'06"

Facilities Affected: None below elevation 390

Geologic Conditions: Both abutments are silty sand with gravel, cobbles and boulders (englacial drift). Surficial deposits are englacial drift and gneiss bedrock. Depth to triassic sandstone or conglomerate bedrock is estimated to be less than 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2502

Location: On an unnamed tributary to Bachelor Brook about 700 feet upstream from Stebbins Street in Belchertown, Mass.

Belchertown, Mass. USGS quadrangle

Latitude: 42°17'32" Longitude: 72°26'56"

Facilities Affected: None below elevation 326

Geologic Conditions: Both abutments are thin discontinuous deposits of outwash sand or gravel with outcrops of triassic conglomerate. Most of the foundation is on bedrock except for the brook where estimated depth to triassic conglomerate is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be fair to good. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

This is substantially the same site as Site M11-2 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970.

POTENTIAL SITE CV-2503

Location: On Bachelor Brook approximately 6,100 feet downstream from Bay Road in Belchertown, Mass.

Belchertown, Mass. USGS quadrangle

Latitude: 42°17'31" Longitude: 72°26'35"

Facilities Affected: None below elevation 306

Geologic Conditions: Both abutments are thin outwash sand or gravel and are shallow to bedrock. Surficial deposits are swamp, outwash sand and gravel, and conglomerate bedrock. Depth to conglomerate bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2504

Location: On an unnamed tributary to Bachelor Brook about 500 feet upstream from Harris Road in Belchertown, Mass.

Belchertown, Mass. USGS quadrangle

Latitude: 42°17'12" Longitude: 72°29'03"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Harris Road and utilities	322
	2 Houses	318
	House	312
	2 Houses	310
	House, swimming pool	295

Geologic Conditions: Both abutments are thin outwash sand and gravel with numerous outcrops of triassic bedrock. Surficial deposits are swamp, outwash sand and gravel, and bedrock. Depth to granite bedrock in the foundation is estimated to be from 20 to 30 feet. Waterholding capabilities appear to be good. Pervious borrow material for dam construction was located near the site; impervious material was not located.

POTENTIAL SITE CV-2504 (cont'd)

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2506

Location: On Bachelor Brook about 2,700 feet upstream from George Hannum Road in South Hadley, Mass.

Belchertown, Mass. USGS quadrangle

Latitude: 42°17'02" Longitude: 72°26'57"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	302
	Stebbins St. & utilities	301
	13 Houses	301
	7 Houses & woodworking shop	300
	2 Houses	295

Geologic Conditions: Both abutments are outwash sand or gravel. Surficial deposits are swamp and outwash sand and gravel. Depth to triassic conglomerate bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2507

Location: On Bachelor Brook about 1,500 feet upstream from Barnett Street in Granby, Mass.

Mt. Holyoke, Mass. USGS quadrangle

Latitude: 42°16'39" Longitude: 72°33'03"

Facilities Affected: None below elevation 215

Geologic Conditions: Both abutments are outwash sand or gravel with possible thinly bedded lacustrine deposits in the foundation. Depth to triassic sandstone or shale bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be fair to poor. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2508

Location: On Weston Brook about 3,300 feet downstream from George Hannum Street in Belchertown, Mass.

Belchertown, Mass. USGS quadrangle

Latitude: 42°16'20" Longitude: 72°26'25"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	332
	Boardman St. & utilities	325
	Telephone cables	325

Geologic Conditions: Both abutments are sand and gravel and are shallow to bedrock. Depth to conglomerate bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED BACHELOR BROOK									
BENEFICIAL POOL																			
FLEV	STORAGE	COST PER AC FT	AREA (AC)	COST/ SURF AC	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	CCST PER AC FT	TUP ELEV	ELEV AREA	DESIGN HIGH WATER	DAM	SAFE YIELD						
(MSL)	AC FT	IN	(AC)	(\$)	(FT)	(MSL)	AC FT	IN	(\$)	(MSL)	(AC)	(MSL)	FT	CY	(1000)	HGT VOL	FILL PERCENT	CHANCE	AT 95
DA= 0.60 SQ MI = 384 AC										USGS QUAD-MT HOLYOKE									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE-RATING (1)										LATITUDE 42-17-32 LONGITUDE 72-31-06									
RUNOFF = 8.10 IN, PEAK FLOW = 181 CFS																			
34C.7	0	0.0	1	3180	10	30600	29.2	8.8	363.6	E	133	4.1	2080	366.2	16	370.2	38	43	0.18
361.2	100	3.0	10	30600	29.2	363.7	E	134	4.1	2380	368.0	17	371.2	39	46	0.30			
369.2	217	6.8	19	23120	37.3	371.7	E	270	8.3	1590	375.2	22	378.7	47	73	0.45			
38C.2	450	14.1	24	24690	48.2	382.7	E	521	16.2	1140	385.5	29	388.5	57	124	0.53			
388.2	683	21.4	32	23250	56.5	391.0	E	774	24.2	970	393.2	39	396.2	64	176	0.55			
391.7	800	25.0	36	22580	59.8	394.2	E	898	28.0	920	396.4	43	399.4	67	201	0.55			
DA= 1.52 SQ MI = 973 AC										USGS QUAD-BELCHERTOWN									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE-RATING (1)										LATITUDE 42-17-32 LONGITUDE 72-26-56									
RUNOFF = 8.10 IN, PEAK FLOW = 434 CFS																			
306.6	0	0.0	8	3870	34	11500	2.5	2.5	316.5	E	336	4.1	1070	319.0	84	322.5	18	45	0.26
312.0	100	1.2	34	11500	8.0	314.5	E	220	2.7	1760	318.2	78	321.2	17	39	0.42			
314.5	205	2.5	51	8930	10.5	317.0	E	368	4.5	1240	320.2	92	323.2	19	49	0.65			
317.7	415	5.1	75	7420	13.7	320.2	E	635	7.8	880	323.0	109	326.1	22	66	0.83			
32C.2	625	7.6	93	6860	16.2	322.7	E	888	11.0	720	325.1	121	328.2	24	81	0.90			
321.4	730	9.0	99	6760	17.4	323.9	E	1008	12.3	660	326.0	127	329.1	25	88	0.90			
DA= 3.78 SQ MI = 2419 AC										USGS QUAD-BELCHERTOWN									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE-RATING (3)										LATITUDE 42-17-31 LONGITUDE 72-26-35									
RUNOFF = 8.10 IN, PEAK FLOW = 1121 CFS																			
293.9	0	0.0	26	3540	58	6120	1.9	1.9	302.7	E	837	4.1	410	305.2	261	309.2	17	39	0.33
296.2	100	0.5	58	6120	4.3	298.7	E	318	1.6	1110	302.9	191	306.1	14	21	0.74			
299.0	301	1.5	93	5050	7.0	301.5	E	629	3.0	750	305.5	265	309.0	17	37	1.03			
30C.7	502	2.5	129	4790	8.8	300.7	T	533	2.5	1160	306.0	281	309.0	17	37	1.35			
302.5	764	3.8	179	4190	10.5	302.5	T	794	3.9	950	306.0	281	309.0	17	37	1.35			

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CHUTE, C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SURWATERSHED BACHELOR BRUOK									
BENEFICIAL POOL										DESIGN * HIGH WATER *									
ELEV	STORAGE	COST	PER	AREA	CUST/	SURF	DEPTH	AT	CREST	STORAGE	COST	PER	ELEV	AREA	ELEV	HGT	FILL	PERCENT	SAFE
(MSL)	AC FT	IN	AC	(AC)	(AC)	(AC)	(FT)	DAM	TYPE	AT CREST	AC FT	IN	(MSL)	(AC)	(MSL)	FT	(1000	CHANCE	YIELD
DA= 1.00 SQ MI = 640 AC										USGS QUAD-BELCHERTOWN									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE RATING (1)										LATITUDE 42-17-12 LONGITUDE 72-29-03									
SITE-CV-2504										RUNOFF = 8.10 IN, PEAK FLOW = 302 CFS									
302.7	0	0.0	5	21	24340	10.7	2.8	314.6	E	221	4.1	2120	317.2	47	320.7	21	56	0.23	
310.7	100	1.9	5170	21	24340	10.7	2.8	314.6	E	221	4.1	2120	317.2	47	320.7	21	56	0.23	
314.0	190	3.5	3310	34	18480	14.0	3.5	316.5	E	296	5.5	2130	319.7	57	322.9	23	70	0.34	
318.2	370	6.8	2110	51	15330	18.2	3.5	320.7	E	518	9.7	1510	323.4	66	326.5	27	98	0.50	
321.4	550	10.3	1620	61	14520	21.4	3.5	323.9	E	719	13.5	1240	326.2	74	329.2	29	125	0.64	
322.5	618	11.6	1510	64	14570	22.5	3.5	325.0	E	794	14.8	1170	327.1	76	330.1	30	136	0.67	
DA= 5.70 SQ MI = 3648 AC										USGS QUAD-BELCHERTOWN									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE RATING (3)										LATITUDE 42-17-02 LONGITUDE 72-26-57									
SITE-CV-2506										RUNOFF = 8.10 IN, PEAK FLOW = 1254 CFS									
287.5	0	0.0	24	47	26650	6.4	3.5	301.6	E	1726	5.6	730	303.4	337	308.1	24	79	0.37	
290.4	100	0.3	12610	47	26650	6.4	3.5	301.6	E	1726	5.6	730	303.4	337	308.1	24	79	0.37	
293.2	306	1.0	4740	93	15610	9.3	3.5	301.7	E	1756	5.8	830	304.1	366	308.5	25	83	0.83	
296.7	719	2.4	2330	147	11370	12.7	3.5	303.2	E	2193	7.1	760	305.2	411	309.5	25	92	1.50	
299.2	1131	3.6	1610	186	9750	15.2	3.5	303.7	E	2355	7.6	770	306.0	440	309.7	26	95	2.01	
300.2	1338	4.4	1410	209	9010	16.2	3.5	304.7	E	2738	9.0	690	306.5	462	309.9	26	96	2.23	
DA= 26.13 SQ MI = 16723 AC										USGS QUAD-MT HOLYOKE									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE RATING (3)										LATITUDE 42-16-39 LONGITUDE 72-33-03									
SITE-CV-2507										RUNOFF = 8.10 IN, PEAK FLOW = 2650 CFS									
202.0	100	0.1	7130	42	16800	13.0	3.5	204.5	E	422	0.3	1690	206.8	54	210.7	22	64	0.62	
206.0	288	0.2	2860	52	15840	17.0	3.5	208.5	E	634	0.5	1300	210.8	63	214.7	26	89	1.17	
209.3	477	0.3	1910	60	15160	20.4	3.5	211.8	E	842	0.6	1080	214.2	70	218.2	29	114	1.73	
215.1	853	0.6	1250	72	14830	26.0	3.5	217.6	E	1248	0.8	850	220.0	82	223.7	35	163	2.67	

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, I= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

EXISTING SITE CV-2509 (Pearl City Pond)

Location: On Bachelor Brook about 1,200 feet upstream from Wood-bridge Street in South Hadley, Mass.

Mt. Holyoke, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
172		11	17,650 27.58

Potential for Expansion: It appears that the surface area could be increased to about 125 acres without affecting facilities other than Route 116 and Barnett Street.

Remarks: The dam is a rock masonry drop-structure with concrete side walls. The structure is in poor condition.

Ownership and Use: The pond is owned by Samuel Salem and Emile and Basil Ferris and has no specific use at the present time.

EXISTING SITE CV-2510 (Aldrich Lake)

Location: On Bachelor Brook just upstream of Aldrich Street at Aldrich Mills in Granby, Mass.

Mt. Holyoke, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
243	36	20	16,200 25.31

Potential for Expansion: Raising the existing water level by 10 feet would provide about 110 acres of water surface. A Boy Scout Camp and 4 local streets would be affected.

Remarks: The dam is a concrete structure about 75 feet long with a 25-foot wide weir in the center. There is a corrugated metal drain pipe to the right of the weir. In the right abutment is a canal that carries water to an old mill.

Ownership and Use: The site is owned by Merrill C. Aldrich and has no specific use at the present time.

EXISTING SITE CV-2511 (Forge Pond)

Location: On Bachelor Brook about 25 feet upstream from School Street in Granby, Mass.

Belchertown, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
271	72	11	9,750 15.23

Potential for Expansion: Significant expansion does not appear practical. At least 20 houses, Route 202 and several local streets would be affected.

Remarks: The dam is a rock masonry structure about 60 feet long with a wood plank weir crest. Depth of weir is 3.5 feet. To the left of the spillway there is a gated metal pipe outlet.

Ownership and Use: The pond is owned by Sam Salem and Emile Ferris and is used for recreation.

EXISTING SITE CV-2512 (Lithia Springs Reservoir)

Location: On an unnamed tributary of Elmer Brook about 5,700 feet northwest of Moody Corner in South Hadley, Mass.

Mt. Holyoke, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
232	20	30	600 0.94

Potential for Expansion: Raising the existing water level by 30 feet would provide about 60 acres of water surface. A dirt road would be affected. Length of the dam would be more than tripled.

Remarks: The dam is a 300-foot long earthfill structure with a concrete cutoff wall and a rock-fill toe. The principal spillway is a 36-inch concrete pipe with gate control. The emergency spillway, located on the right abutment, is a 25-foot wide channel with a concrete headwall on the left side. The dam is maintained.

Ownership and Use: The reservoir is owned by the town of South Hadley and is used for water supply.



CV-2509
PEARL CITY POND



CV-2512
LITHIA SPRINGS RESERVOIR



CV-2510
ALDRICH LAKE



CV-2512
LITHIA SPRINGS RESERVOIR

EXISTING RESERVOIRS
SUBWATERSHED CV-25
BACHELOR BROOK





CENTRAL CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed CV-26, Stony Brook

The Stony Brook subwatershed covers about 34,300 acres in Chicopee, Holyoke, Ludlow, and West Springfield in Hampden County; and Easthampton, Granby, and South Hadley in Hampshire County.

The watershed is divided by the portion of the Connecticut River between the Hampshire-Hampden County line and the South End Bridge in Springfield.

Geology of the potential reservoir sites is characterized by outwash sand and gravel underlain by triassic sandstone and shale bedrock.

Six potential reservoir sites and seven existing reservoirs were studied.

POTENTIAL SITE CV-2601

Location: On Stony Brook about 1,500 feet upstream from Ferry Street in South Hadley, Mass.

Mt. Holyoke, Mass. USGS quadrangle

Latitude: 42°15'35" Longitude: 72°35'54"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	High tension line	110

Geologic Conditions: Both abutments are outwash sand and gravel. There may be thinly bedded lacustrine deposits near the surface. Surficial deposits are swamp, outwash sand and gravel, and possibly thinly bedded silt and clay. Depth to triassic sandstone and shale bedrock in the foundation is estimated to be from 90 to 100 feet. Water-holding capabilities appear to be fair. Leakage is expected through both abutments. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: Preliminary designs indicate that the spillway should be a reinforced concrete drop structure.

POTENTIAL SITE CV-2602

Location: On White Brook about 1,100 feet upstream from it's confluence with the Connecticut River in South Hadley, Mass.

Springfield North, Mass. USGS quadrangle

Latitude: 42°14'01" Longitude: 72°35'50"

Facilities Affected: None below elevation 137

Geologic Conditions: Both abutments are outwash sand or gravel. Depth to triassic sandstone or shale bedrock is estimated to be from 50 to 60 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and possibly through the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2604

Location: On Stony Brook about 1,900 feet downstream from Kendall Street in Granby, Mass.

Ludlow, Mass. USGS quadrangle

Latitude: 42°14'33" Longitude: 72°29'18"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Gravel Pit	268
	Kendall Road & utilities	266

Geologic Conditions: Both abutments are outwash sand or gravel with schist bedrock outcrops on the left abutment and triassic bedrock outcrops on the right abutment. Surficial deposits are swamp and outwash sand and gravel. Depth to triassic sandstone or shale bedrock in the foundation is estimated to be from 40 to 50 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2605

Location: On Stony Brook about 4,000 feet upstream from Taylor Street in Granby, Mass.

Ludlow, Mass. USGS quadrangle

Latitude: 42°14'04" Longitude: 72°29'24"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Gravel Pit	268
	Kendall St. & utilities	266
	Chicopee St. & utilities	260

Geologic Conditions: Both abutments are outwash sand or gravel. Surficial deposits are swamp and outwash sand and gravel. Depth to triassic sandstone or shale bedrock in the foundation is estimated to be 40 to 50 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2606

Location: On Muddy Brook approximately 250 feet upstream from East Street in Granby, Mass.

Springfield North, Mass. USGS quadrangle

Latitude: 42°13'28" Longitude: 72°30'46"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Truby St. & utilities	238

Geologic Conditions: Both abutments are outwash fine sand and gravel. Surficial deposits are swamp and outwash sand and gravel. Depth to triassic sandstone and shale bedrock is estimated to be from 60 to 80 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE CV-2607

Location: On Goldine Brook about 1,500 feet upstream from Hill Avenue in West Springfield, Mass.

Mt. Tom, Mass. USGS quadrangle

Latitude: $42^{\circ}08'27''$ Longitude: $72^{\circ}38'26''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House and barn	195
	Falvy Street	190
	3 Houses	190
	2 Houses	180
	Piper Road and utilities	176

Geologic Conditions: Both abutments are outwash sand and gravel with possibly some lacustrine beds at the toe. Surficial deposits are outwash sand and gravel and some swamp. Depth to triassic sandstone and shale bedrock is estimated to be from 60 to 80 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-CENTRAL CONNECTICUT VALLEY										SUBWATERSHED STONY BROOK									
BENEFICIAL POOL																			
COST					STORAGE					DESIGN					DAM				
LEVEL	STORAGE	PER	AC	FT	AT	DEPTH	CREST	ELEV	TYPE	AC	FT	PER	COST	ELEV	AREA	ELEV	TOP	FILL	PERCENT
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN																
(MSL)	AC	FT	IN										</						

EXISTING SITE CV-2608 (Lake Bray)

Location: On an unnamed tributary to Connecticut River at Ferry Road in Holyoke, Mass.

Mt. Holyoke, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
162	13	15	1,000 1.56

Potential for Expansion: Raising the existing water level by 40 feet would provide about 50 acres of water surface, steep topography limits the increase in surface area.

Remarks: The dam is formed by the Ferry Road highway embankment. The spillway is a concrete drop inlet with an 8-foot corrugated metal pipe conduit. The drop inlet is gated to enable draining the reservoir. To the left of the spillway there are two corrugated metal pipes. The inlets to these pipes are partly closed with concrete and the pipes do not function except during times of high water.

Ownership and Use: The lake is owned by Mt. Tom Reservation Commission, Hampshire County Commissioners, and is used for re-creation.

EXISTING SITE CV-2609 (Prospect Hill Upper Pond)

Location: On Stony Brook about 2,200 feet upstream from Morgan Street in South Hadley, Mass.

Mt. Holyoke, Mass. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area (Acres) (Sq. Mi.)</u>
149	10	18	11,600 18.13

Potential for Expansion: Poor. Expansion would affect the Mount Holyoke College Campus.

Remarks: The dam is a concrete structure about 100 feet long with a 35-foot wide drop spillway. The weir is about 4 feet. To the right of the spillway is a section of stoplogs that regulate water to a canal.

Ownership and Use: The pond is owned by the Mt. Holyoke College and is used for recreation.

EXISTING SITE CV-2610 (Prospect Hill Lower Pond)

Location: On Stony Brook about 600 feet upstream from Morgan Street, in South Hadley, Mass.

Mt. Holyoke, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>175</u>	<u>8</u>	<u>16</u>	<u>11,750 18.36</u>

Potential for Expansion: Poor. Expansion would affect the Mt. Holyoke College campus.

Remarks: The dam is a concrete gravity structure about 80 feet long.

Ownership and Use: The pond is owned by Mt. Holyoke College and is used for recreation.

EXISTING SITE CV-2611 (Mountain Park Reservoir)

Location: On an unnamed tributary to the Connecticut River about 8,700 feet upstream from Ferry Road in Holyoke, Mass.

Easthampton, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>706 est.</u>	<u>1</u>	<u>3</u>	<u>50 0.08</u>

Potential for Expansion: The very small drainage area and steep topography limit expansion potential.

Remarks: The dam is an earthfill structure about 100 feet long. The 20-foot wide spillway was dammed with sandbags and water was outletting from the reservoir through culverts beneath the access road at the time of the inspection.

Ownership and Use: The reservoir is owned by Mt. Tom Reservation Commission, Hampshire County Commissioners, Springfield, Mass., and used to store water to make snow.

EXISTING SITE CV-2612 (Whiting Street Reservoir)

Location: On an unnamed tributary to the Connecticut River about 3,000 feet upstream from Route 5 in Holyoke, Mass.

Mt. Tom, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>387</u>	<u>110</u>	<u>15</u>	<u>900 1.41</u>

Potential for Expansion: The relatively small drainage area and steep topography limit expansion potential.

Remarks: The dam is an earthfill structure about 1,900 feet long with a 15-foot top width. The upstream slope is a vertical concrete wall. A brick gate house is located at the center of the dam.

Ownership and Use: The reservoir is owned by the City of Holyoke, Holyoke Water Works, and is used for municipal water supply.

EXISTING SITE CV-2613 (Leaping Well Reservoir)

Location: On Leaping Well Brook about 25 feet upstream from Granby Road in South Hadley, Mass.

Springfield North, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>218 est.</u>	<u>11</u>	<u>4</u>	<u>200 0.31</u>

Potential for Expansion: Limited. A residential area abutting the reservoir would be affected.

Remarks: The dam is an earthfill structure about 250 feet long with a 6-foot top width. The downstream slope is forested with 18-inch diameter pine trees. A gate house with a catwalk access extends into the reservoir.

Ownership and Use: The reservoir is owned by the town of South Hadley, Water Department, and is used for municipal water supply.

EXISTING SITE CV-2614 (Mountain Lake)

Location: On an unnamed tributary to the Connecticut River about 25 feet downstream from Irene Street at Smith Highlands in Chicopee, Mass.

Springfield North, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
164 (est.)	15	23	1,450 2.26

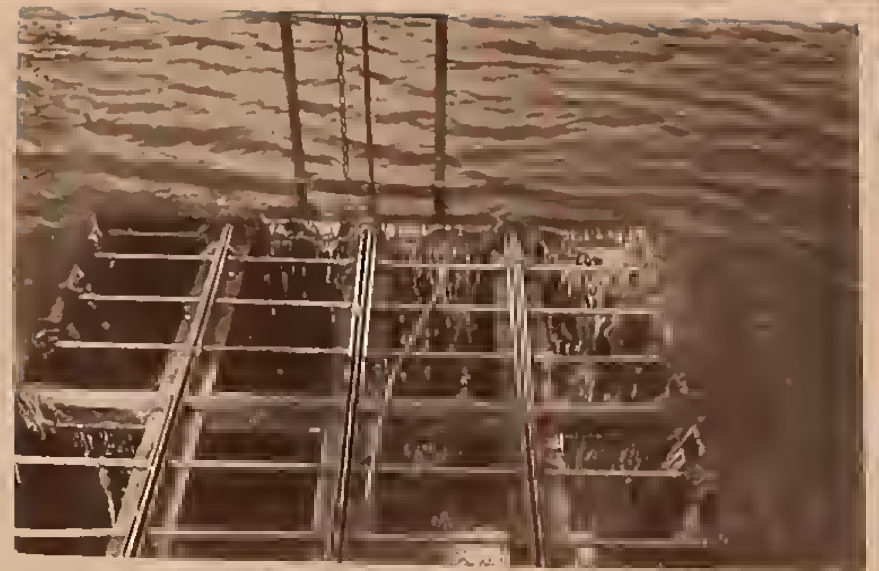
Potential for Expansion: Steep topography limits any significant increase in surface area. A residential area is located on the northeast shore.

Remarks: The dam is an earthfill structure about 150 feet long. Brush is growing on the upstream slope. The downstream slope has many trees growing on it. The spillway, located on the left abutment, is a 100-foot long channel leading to a concrete drop and chute structure. There is also a corrugated metal pipe pond drain.

Ownership and Use: The lake is owned by Chester A. Nowak and is used for recreation.



CV-2601
Lake Bray



CV-2601
Lake Bray

CV-2602
Prospect Hill
Upper Pond

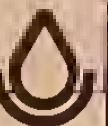


CV-2604
Mountain Park
Reservoir



CV-2603
Prospect Hill Lower Pond

EXISTING RESERVOIRS
SUBWATERSHED CV-26
STONY BROOK





CV-2605
Whiting St. Reservoir



CV-2606
Leaping Well Reservoir



CV-2605
Whiting St. Reservoir





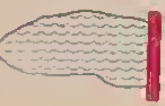

CV-2607
Mountain Lake

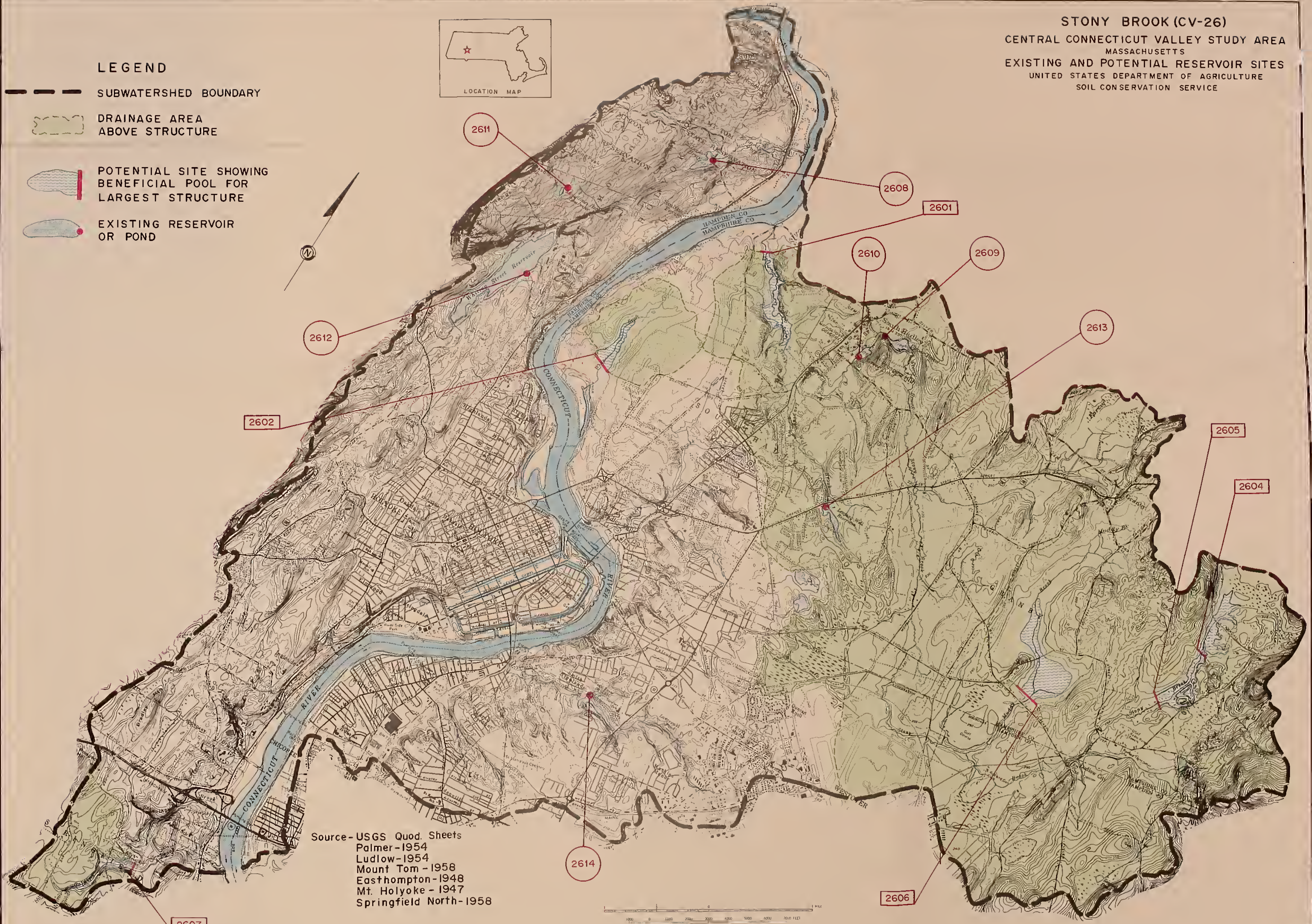
EXISTING RESERVOIRS
SUBWATERSHED CV-26
STONY BROOK



STONY BROOK (CV-26)
CENTRAL CONNECTICUT VALLEY STUDY AREA
MASSACHUSETTS
EXISTING AND POTENTIAL RESERVOIR SITES
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

LEGEND

-  SUBWATERSHED BOUNDARY
-  DRAINAGE AREA ABOVE STRUCTURE
-  POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
-  EXISTING RESERVOIR OR POND



SOUTHERN CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed SC-47, Mill River

The Mill River subwatershed covers about 21,900 acres in East Longmeadow, Hampden, Springfield, and Wilbraham; all in Hampden County.

The major stream is the Mill River which originates in Wilbraham and flows westerly through Springfield to the Connecticut River.

Geology of the potential reservoir sites is characterized by outwash sand and gravel and lacustrine sand and silt underlain by triassic sandstone and shale bedrock.

Two potential reservoir sites and four existing reservoirs were studied.

POTENTIAL SITE SC-4702

Location: On the North Branch of the Mill River about 1,000 feet upstream from Stoney Hill Road in Springfield, Mass.

Hampden, Mass.-Conn. USGS quadrangle

Latitude: 42°06'24" Longitude: 72°27'22"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Springfield St. & utilities	242
	Mobil Pipe Line	242

Geologic Conditions: Both abutments are outwash sand and gravel. Surficial deposits are swamp and outwash sand and gravel. Depth to triassic sandstone bedrock in the foundation is estimated to be 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Pervious material for dam construction was located near the site; impervious material was not located.

Engineering Notes: Either abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 245, two auxiliary dikes will be required.

POTENTIAL SITE SC-4703

Location: On the South Branch of the Mill River about 500 feet upstream from its confluence with Schneelock Brook in Springfield, Mass.

Springfield South, Mass.-Conn. USGS quadrangle

Latitude: 42°06'02" Longitude: 72°31'02"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Golf Course	185
	2 Houses	185
	4 Houses	184
	Pool	182
	Ice Skating Rink	177
	South Branch Rd. & utilities	175

Geologic Conditions: Both abutments are bedded lacustrine sands and silt. Surficial deposits are lacustrine sand and silt. Depth to triassic sandstone-shale bedrock is estimated to be from 60 to 70 feet. Waterholding capabilities appear to be fair to good. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary designs indicate that the spillway should be a reinforced concrete chute or drop structure.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-SOUTHERN CONNECTICUT VALLEY										SUBWATERSHED MILL NO 4									
BENEFICIAL POOL																			
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST SURF AC (\$)	COST / SURF AC (\$)	DEPTH AT DAM (FT)	CREST ELEV ++ (MSL)	STORAGE AT CREST	COST PER AC FT (\$)		DESIGN HIGH WATER	DAM	SAFE YIELD						
(MSL)	AC FT IN												AT 95						
SITE-SC-4702																			
SITE RATING (2)	DA= 5.37 SQ MI =	3437 AC																	
	STREAM WATER QUALITY (B)	USGS QUAD-HAMPDEN																	
	100-YR PRIN SPWY DESIGN STORM																		
	LATITUDE 42-06-24	LONGITUDE 72-27-22																	
	RUNOFF = 7.90 IN,	PEAK FLOW =																	
234.7	0	0.0	30	1.7	243.2	E 1189	4.1	770	*	245.3	481	15	56						
*****THIS SITE LACKS SUFFICIENT STORAGE FOR BENEFICIAL WATER.*****																			

[illegible]

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

*** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. ***

EXISTING SITE SC-4704 (Watershops Pond)

Location: On the Mill River about 200 feet upstream from Walnut Street in Springfield, Mass.

Springfield South, Mass.-Conn. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
157	169	30	21,050 32.89

Potential for Expansion: None: Industrial and residential areas surround the pool area.

Remarks: The dam is a rockfill structure about 75 feet long with a maximum head of 2 feet and a total fall of 30 feet. The structure has a gate control but no outlet was visible. Both abutments are part of the former Springfield Armory. The main stream outlets under a stone arch in the Armory and then under Walnut Street.

Ownership and Use: The reservoir is owned by the City of Springfield and was formerly used as a power dam for the Springfield Armory.

EXISTING SITE SC-4705 (Breckwood Lake)

Location: On the North Branch of the Mill River at Breckwood Boulevard in Springfield, Mass.

Springfield South, Mass.-Conn. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
168	7	15	8,100 12.66

Potential for Expansion: Limited. A residential area surrounds the pool.

Remarks: The dam is about 200 feet long and is formed by the embankment of Breckwood Boulevard. Trees and brush are growing on both slopes of the dam. The spillway is an ogee structure which outlets beneath Breckwood Boulevard in a 15-foot wide concrete channel. The spillway concrete is in good condition.

Ownership and Use: The lake is owned by the city of Springfield Park Commission, and is used for recreation.

EXISTING SITE SC-4706 (North Branch Tributary Park Dam)

Location: On an unnamed tributary of the North Branch of the Mill River about 2,500 feet downstream from Lumae Street in Springfield, Mass.

Springfield South, Mass. - Conn. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
188	6	10	400 0.63

Potential for Expansion: Severely limited due to steep terrain and residential area surrounding the pool area.

Remarks: The dam is a concrete drop structure having a weir length of 12 feet and a maximum head of 1 foot. The weir has two 1-foot x 1-foot notches and a total fall of 10 feet. Reinforcing bars are visible in the wingwalls and the concrete is crumbling in places.

Ownership and Use: The site is owned by the City of Springfield and is used for recreation.

EXISTING SITE SC-4707 (Mill Pond (16 Acres Pond))

Location: On the South Branch of the Mill River at Parker Street (State Route 21) in Springfield, Mass.

Hampden, Mass. - Conn. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
208	15	12	6,450 10.08

Potential for Expansion: Dam could be raised only a few feet before excessive facilities in a residential area are inundated.

Remarks: The main dam is formed by the embankment of Parker Street while the main control structure is a 30-foot wide rock weir located about 100 feet downstream. The weir has a maximum head of 1 foot and a vertical fall of 25 feet. Trees and brush are growing on the embankment.

Ownership and Use: The reservoir is owned by the City of Springfield, Park Commission, and is used for recreation.



SC-4705
Breckwood Lake

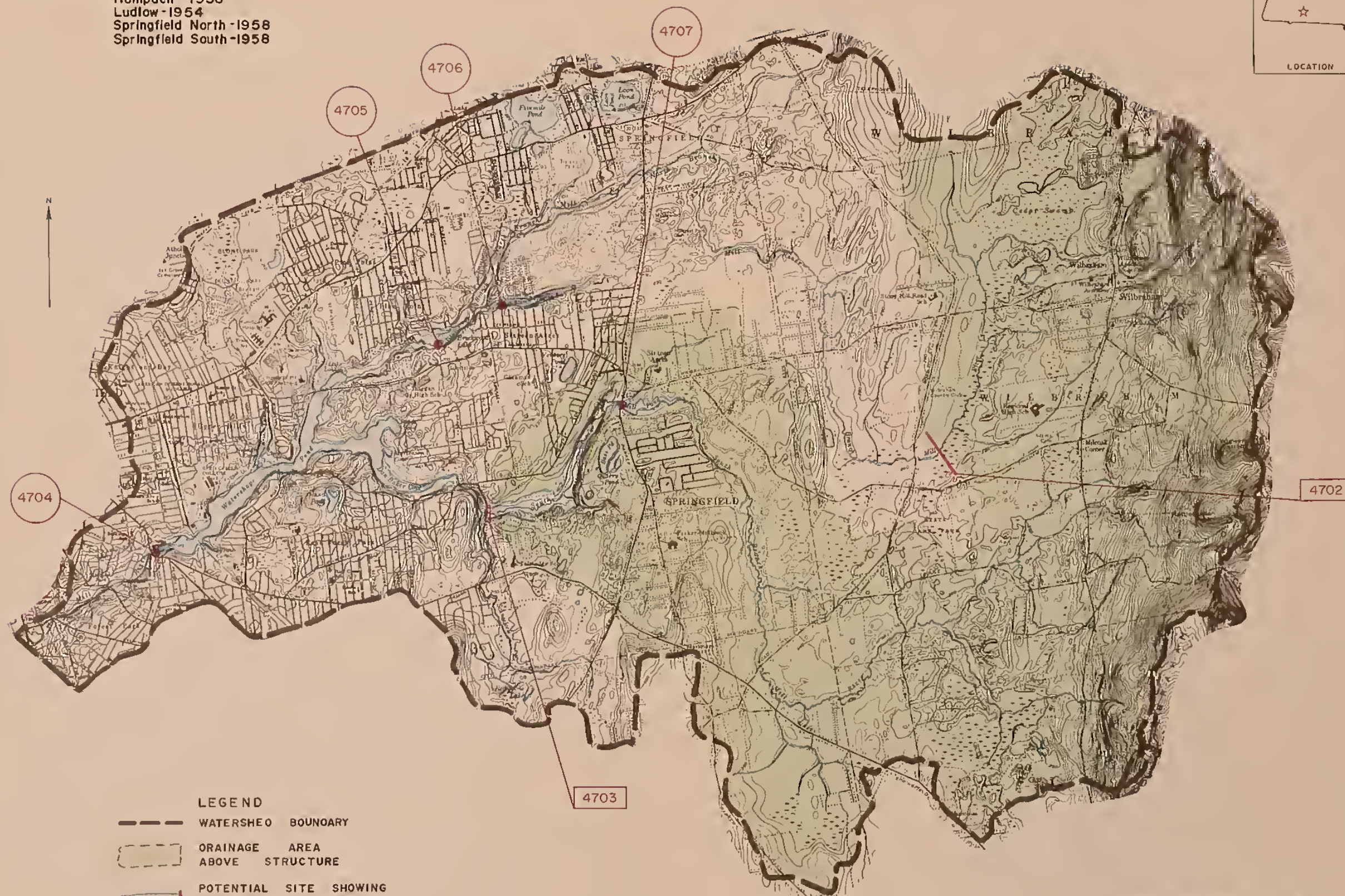


SC-4707
Mill Pond



SC-4704
Watershops Pond

Source - USGS Quad Sheets
 Hampden - 1958
 Ludlow - 1954
 Springfield North - 1958
 Springfield South - 1958



- LEGEND**
- WATERSHED BOUNDARY
 - - - DRAINAGE AREA ABOVE STRUCTURE
 - [] POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
 - [] EXISTING POND OR RESERVOIR



MILL RIVER (SC-47)
 SOUTHERN CONNECTICUT RIVER STUDY AREA
 MASSACHUSETTS
 EXISTING AND POTENTIAL RESERVOIR SITES
 UNITED STATES DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE

SOUTHERN CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed SC-48, Longmeadow Brook

The Longmeadow Brook subwatershed covers about 17,000 acres in Agawam, East Longmeadow, Longmeadow, and Springfield; all in Hampden County.

The watershed is bisected by the portion of the Connecticut River from the South End Bridge in Springfield to the Massachusetts-Connecticut state line.

Geology of the potential reservoir sites is characterized by lacustrine sand and silt underlain by triassic sandstone and shale bedrock.

Five potential reservoir sites and three existing reservoirs were studied.

POTENTIAL SITE SC-4801

Location: On Pecousic Brook about 1,400 feet upstream from Dickinson Street in Springfield, Mass.

Springfield South, Mass.-Conn. USGS quadrangle

Latitude: 42°04'07" Longitude: 72°32'58"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	3 Houses	150

Geologic Conditions: Both abutments are thinly-bedded poorly-graded lacustrine sand and silt. Surficial deposits are swamp and lacustrine sand and silt. Depth to triassic sandstone-shale bedrock is estimated to be from 90 to 100 feet. Waterholding capabilities appear to be fair to good. Slight leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-4802

Location: On an unnamed tributary to Threemile Brook about 2,000 feet upstream from Silver Lake in Agawam, Mass.

West Springfield, Mass.-Conn. USGS quadrangle

Latitude: 42°03'47" Longitude: 72°38'49"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Lodge Hall	162
	Garden St. and Sewer Line	148

Geologic Conditions: Both abutments are fine poorly graded sand with some gravel. Surficial deposits are swamp. Depth to triassic sandstone and shale bedrock is estimated to be from 40 to 50 feet. Waterholding capabilities appear to be fair. Slight leakage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-4803

Location: On Three Mile Brook about 400 feet downstream from its confluence with Tarkill Brook in Agawam, Mass.

Springfield South, Mass.-Conn. USGS quadrangle

Latitude: 42°02'42" Longitude: 72°37'12"

Facilities Affected: None below elevation 68

Geologic Conditions: Both abutments and surficial deposits are bedded fine lacustrine sand and silt. Depth to triassic sandstone and shale bedrock in the foundation is estimated to be from 25 to 30 feet. Waterholding capabilities appear to be fair to good. Slight leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-4805

Location: On Four Mile Brook about 400 feet upstream from Route 5A in Agawam, Mass.

Springfield South, Mass. USGS quadrangle

Latitude: 42°02'27" Longitude: 72°37'03"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Barn	70

Geologic Conditions: Both abutments and surficial deposits are bedded fine lacustrine sand and silt. Depth to triassic sandstone and shale in the foundation is estimated to be from 25 to 30 feet. Waterholding capabilities appear to be fair to good. Slight leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-4806

Location: On Longmeadow Brook about 700 feet upstream from Longmeadow Street in Longmeadow, Mass.

Springfield South, Mass. USGS quadrangle

Latitude: 42°02'13" Longitude: 72°31'55"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Mill Rd., utilities & sewer line	70

Geologic Conditions: Both abutments and surficial deposits are bedded lacustrine fine sand and silt. Depth to triassic sandstone and shale in the foundation is estimated to be from 50 to 60 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-SOUTHERN CONNECTICUT VALLEY										SUBWATERSHED LONG MEADOW BROOK									
BENEFICIAL POOL																			
ELEV	STORAGE	PER AC FT	AREA	COST/ SURF AC	DEPTH AT DAM	CREST ELEV	STORAGE AT CREST	COST PER AC FT		DESIGN HIGH WATER	DAM	TOP ELEV	HGT VOL (1000 CY)	FILL PERCENT	SAFE YIELD AT 95 PERCENT CHANCE				
(MSL)	AC FT	IN	(\$)	(AC)	(FT)	(MSL)	AC FT	IN	(\$)	(MSL)	(AC)	(MSL)	FT		(MGD)				
DA= 4.38 SQ MI = 2803 AC										LATITUDE 42-04-07 LONGITUDE 72-32-58									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE-SC 4801																			
SITE RATING (2)																			
108.1	0	0.0	8	17	29820	16.0	8.2	148.2	E	1442	6.1	530	150.6	73	155.0	55	116		
116.0	100	0.4	5170	17	29820	16.0	8.2	148.2	E	1442	6.1	530	129.0	37	132.8	33	35		0.35
125.8	338	1.4	2120	32	22560	25.9	12.5	8.8	T	373	1.6	1920	138.8	49	144.2	44	69		0.84
137.7	815	3.5	1100	48	18680	37.7	13.7	7.7	T	850	3.5	1050	148.7	68	151.7	52	99		1.48
146.3	1292	5.5	790	63	16080	46.4	14.6	3.3	T	1327	5.6	770	152.5	79	155.5	55	118		1.95
147.5	1363	5.8	750	66	15610	47.5	14.7	5.5	T	1398	6.0	730	152.3	79	155.3	55	118		2.01
SITE-SC 4802																			
SITE RATING (2)																			
136.6	0	0.0	2	15	41070	20.9	6.6	154.3	E	170	4.1	2800	156.8	29	159.8	30	33		
150.8	100	2.4	6110	15	41070	20.9	6.6	154.3	E	250	6.1	2440	159.8	35	162.8	33	41		0.21
154.8	176	4.3	3850	24	28230	24.7	15.9	3.3	E	313	7.6	2160	161.7	42	164.7	35	47		0.30
160.0	328	8.0	2390	36	21900	30.0	16.2	5.5	E	438	10.7	1790	164.8	53	167.8	38	58		0.43
162.5	434	10.6	2020	45	19540	32.5	16.5	0.0	E	561	13.7	1560	167.3	62	170.3	40	70		0.50
SITE-SC-4803																			
SITE RATING (3)																			
62.5	102	0.4	9520	31	30910	12.5	62.5	T	145	0.5	6710		67.4	61	70.4	20	43		0.37

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
 (2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
 (3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
 (4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
 (5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

```

***** STUDY AREA-SOUTHERN CONNECTICUT VALLEY SUBWATERSHED LONG MEADOW BROOK *****
***** BENEFICIAL POOL *****
*****
***** COST/ DEPTH * CREST * STORAGE * COST * * TOP * FILL *PERCENT *****
***** ELEV STORAGE PER AREA SURF AT * ELEV * AT CREST * PER * AC FT * * * * * HGT VOL *CHANCE *****
***** (MSL) AC FT IN ($ ) (AC) ($ ) (MSL) AC FT IN ($ ) (AC) * (MSL) FT CY) * (MGD) *****
*****
***** SITE-SC-4805 *****
***** SITE RATING (3) *****
***** DA= 3.84 SQ MI = 2458 AC ***** USGS QUAD-SPRINGFIELD SOUTH *****
***** STREAM WATER QUALITY (B) ***** 100-YR PRIN SPWY DESIGN STORM *****
***** RUNOFF = 7.90 IN, PEAK FLOW = 824 CFS *****
***** LATITUDE 42-02-27 LONGITUDE 72-37-03 *****
*****

```

52.6	0	0.0	15	4.6 *	71.4 T	850	4.1	770 *	75.8	92 *	79.6	32	40 *	****
57.0	100	0.5	32	9.0 *	57.0 T	131	0.6	3600 *	70.0	60 *	77.4	29	33 *	0.33
61.1	267	1.2	46	13.2 *	61.1 T	297	1.5	1620 *	72.1	71 *	75.5	27	28 *	0.68
67.6	600	2.9	56	19.7 *	67.6 T	631	3.0	1080 *	76.1	93 *	80.0	32	41 *	1.16
72.5	901	4.4	73	24.5 *	72.5 T	931	4.5	800 *	77.5	101 *	80.5	32	46 *	1.50

[illegible]

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

*** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

EXISTING SITE SC-4810 (Porter Lake (Forest Park Upper))

Location: On Pecousic Brook about 2,300 feet upstream from Longmeadow Street in Springfield, Mass.

Springfield South, Mass. - Conn. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>88</u>	<u>28</u>	<u>25</u>	<u>4,500 7.03</u>

Potential for Expansion: Steep topography limits any significant increase in surface area.

Remarks: The dam is a 400-foot long section of the embankment of Park Drive in Forest Park. Both slopes of the dam are covered with trees and brush. The spillway is a 70-foot wide circular weir having a maximum head of 3 feet and a total fall of 10 feet.

Ownership and Use: The lake is owned by the City of Springfield, Park Commission, and is used for recreation.

EXISTING SITE SC-4811 (Silver Lake)

Location: On an unnamed tributary to Threemile Brook about 600 feet upstream from Suffield Street (State Route 75) in Agawam, Mass.

West Springfield, Mass.-Conn. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>125</u>	<u>8.3</u>	<u>8</u>	<u>800 1.25</u>

Potential for Expansion: Limited due to residences along the waters' edge.

Remarks: The dam is an earthfill structure about 100 feet long with a concrete and stone-block weir spillway. The weir is 10 feet wide and has a total drop of 6 feet. There is a 4-foot wide 6-inch deep notch in the center of the weir.

Ownership and Use: The lake is privately owned and is used for recreation.

EXISTING SITE SC-4812 (Turner Park Dam)

Location: At the headwaters of Longmeadow Brook about 2,200 feet southwest of the intersection of Williams and Maple Streets in Longmeadow, Mass.

Springfield South, Mass.-Conn. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)	
<u>183</u>	<u>6</u>	<u>13</u>	<u>50</u>	<u>0.08</u>

Potential for Expansion: The very small drainage area limits expansion potential.

Remarks: The dam is an earthfill structure about 80 feet long. The principal spillway consists of a 36-inch corrugated metal pipe drop-inlet and a 24-inch corrugated metal pipe conduit. There is a 12-inch gated outlet used for draining the pool.

Ownership and Use: The site is owned by the Town of Longmeadow and is used for recreation.



SC-4810
Porter Lake



SC-4811
Silver Lake



SC-4812
Turner Park Dam



LEGEND

- WATERSHED BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- EXISTING POND OR RESERVOIR

Source - USGS Quad. Sheets
Springfield North-1958
West Springfield-1958

LONGMEADOW BROOK (SC-48)
SOUTHERN CONNECTICUT RIVER STUDY AREA
MASSACHUSETTS
EXISTING AND POTENTIAL RESERVOIR SITES
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE



SOUTHERN CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed SC-49, Freshwater Brook

The Massachusetts portion of the Freshwater Brook subwatershed covers about 1,700 acres in East Longmeadow and Longmeadow; both in Hampden County.

The subwatershed includes the area drained by Jawbuck Brook. This brook forms in Longmeadow and flows southwesterly to Freshwater Brook in Enfield, Connecticut.

One existing reservoir was studied. There were no potential reservoir sites which met study criteria.

EXISTING SITE SC-4901 (Whetstone Tobacco #3)

Location: On Jawbuck Brook about 2,400 feet downstream from Denslow Road in Longmeadow, Mass.

Springfield South, Mass.-Conn. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
188 (est.)	10.1	8	800 1.25

Potential for Expansion: Expansion is limited by the nearby railroad. Extensive diking would be required and a large area of very shallow water would be created.


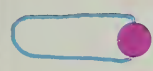
Remarks: The dam is an earthfill structure about 400 feet long with a 50-foot wide concrete weir located on the right abutment. The weir has a maximum head of 2 feet and has an 8-inch corrugated metal pipe located in the center which is used as a pond drain. Brush is growing on both slopes of the dam.

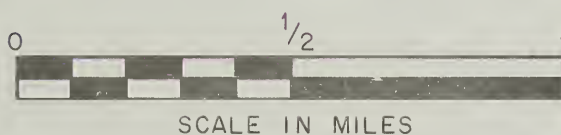
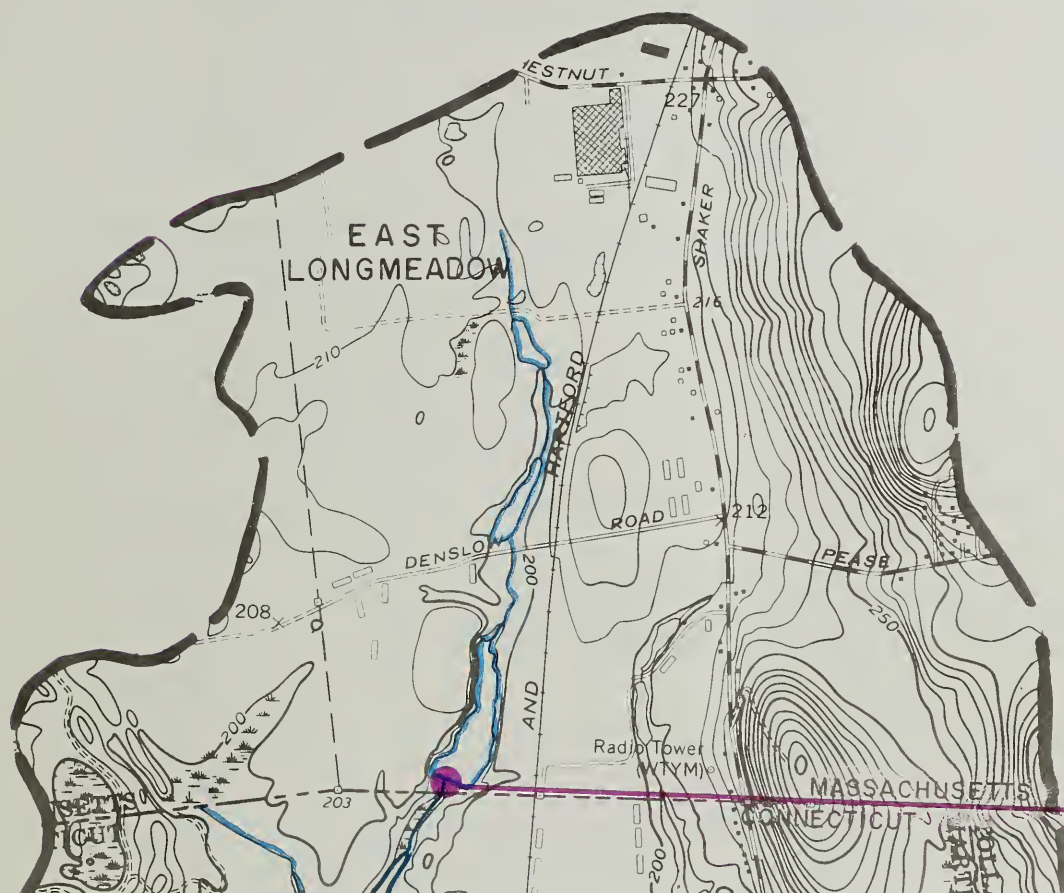
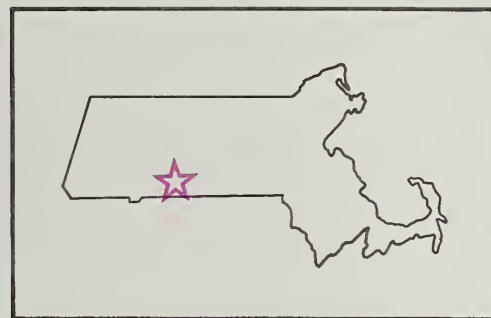
Ownership and Use: The site is owned by Whetstone Farms and is used for irrigation water.



SC-4901
Whetstone

LEGEND

-  SUBWATERSHED BOUNDARY
-  EXISTING POND OR RESERVOIR



FRESHWATER BROOK (SC-49)

SOUTHERN CONNECTICUT RIVER STUDY AREA
MASSACHUSETTS

EXISTING AND POTENTIAL RESERVOIR SITES
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Source - U.S.G.S. Quad Sheets
Springfield South - 1958
Broad Brook - 1964

SOUTHERN CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed SC-50, Stony Brook

The Massachusetts portion of the Stony Brook subwatershed covers about 5,700 acres in Agawam and Southwick; both in Hampden County.

The subwatershed includes several small streams which form in Massachusetts and flow southerly into Connecticut joining Stony Brook in Enfield.

Geology of the potential reservoir sites is characterized by lacustrine sand and silt underlain by triassic sandstone, shale, and conglomerate bedrock.

Three potential reservoir sites and two existing reservoirs were studied.

POTENTIAL SITE SC-5002

Location: On Philo Brook about 4,800 feet downstream from Shoemaker Lane in Agawam, Mass.

West Springfield, Mass. USGS quadrangle

Latitude: 42°02'54" Longitude: 72°40'05"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Golf Course	183

Geologic Conditions: The left abutment is bedded fine sand and silt at the lower elevation with possibly triassic bedrock higher on the abutment. The right abutment and surficial deposits are bedded fine sand and silt. Depth to triassic sandstone and shale bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be fair to good. Slight leakage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-5003

Location: On an unnamed tributary to Still Brook about 1,000 feet upstream from Harts Pond, and northwest of Rising Corner, Conn. in Southwick, Mass.

West Springfield, Mass. USGS quadrangle

Latitude: 42°02'22" Longitude: 72°42'48"

Facilities Affected: None below elevation 226

Geologic Conditions: Both abutments are a thin soil mantle underlain by shale, sandstone, conglomerate and basalt. Surficial deposits are swamp and triassic bedrock. Depth to triassic bedrock in the foundation is estimated to be from 25 to 30 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: Preliminary designs indicate that the spillway should be a reinforced concrete drop structure.

POTENTIAL SITE SC-5004

Location: On Still Brook about 800 feet upstream from Pine Street in Agawam, Mass.

West Springfield, Mass. USGS quadrangle

Latitude: 42°02'38" Longitude: 72°41'06"

Facilities Affected:	Facility	Elevation
	South West St. & utility lines	205
	2 Barns	200
	2 Barns	195
	2 Barns	190
	Barn	188
	2 Tobacco barns	185
	2 Tobacco barns	180
	High pressure gas line	170
	Barn	143

Geologic Conditions: Both abutments and the surficial deposits are lacustrine sand and silt. Depth to shale, sandstone conglomerate bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 185, an auxiliary dike will be required.

STUDY AREA-SOUTHERN CONNECTICUT VALLEY										SUBWATERSHED STONY RIVER									
BENEFICIAL POOL					EMERGENCY SPILLWAY					DESIGN					DAM				
ELEV	STORAGE	COST	PER	AC FT	COST/	DEPTH	AT	CREST	STORAGE	COST	ELEV	AREA	ELEV	TOP	FILL	PERCENT	SAFE		
(MSL)	AC FT	IN	(\$)	(AC)	AC	FT	DAM	++	TYPE	AC FT	(MSL)	(AC)	(MSL)	(AC)	(CY)	(1000)	YIELD		
DA= 1.59 SQ MI = 1018 AC										USGS QUAD-WEST SPRINGFIELD									
STREAM WATER QUALITY (B)										100-YR PRIN SPWY DESIGN STORM									
SITE-SC-5002										LATITUDE 42-02-54									
SITE RATING										LONGITUDE 72-40-05									
(1)										RUNOFF = 7.90 IN, PEAK FLOW = 435 CFS									
165.8	0	0.0	7	2.8	176.6	T	352	4.1	1330	179.1	88	182.1	19	16	16	0.26	0.65		
171.8	100	1.2	32	8.8	171.8	T	113	1.2	4310	178.8	86	182.0	19	16	16	0.26	0.65		
174.0	186	2.2	49	11.0	174.0	T	198	2.3	2580	178.8	87	181.8	19	15	15	0.40	0.50		
175.6	271	3.2	61	12.6	175.6	T	284	3.4	1990	179.8	94	182.8	20	17	17	0.50	0.65		
177.5	404	4.8	76	14.5	177.5	T	417	4.9	1510	180.0	96	183.0	20	17	17	0.65	0.65		

SITE-SC-5003	DA= 1.09 SQ MI = 698 AC	USGS QUAD-WEST SPRINGFIELD	LATITUDE 42-02-22	LONGITUDE 72-42-48
SITE RATING (1)	STREAM WATER QUALITY (B)	100-YR PRIN SPWY DESIGN STORM	RUNOFF = 7.90 IN, PEAK FLOW =	247 CFS
213.1	0	0.0	9	223.1
217.2	100	1.7	40	226.5
219.0	181	3.0	54	225.8
220.3	263	4.5	63	227.2
222.5	403	6.8	70	228.7

***** SITE-SC-5004 *****																
***** DA= 5.37 SQ MI = 3437 AC *****																
***** USGS QUAD-WEST SPRINGFIELD *****																
***** LATITUDE 42-02-38 *****																
***** LONGITUDE 72-41-06 *****																
***** RUNOFF = 7.90 IN, PEAK FLOW = 1006 CFS *****																
***** SITE RATING (1) *****																
***** STREAM WATER QUALITY (B) *****																
***** 100-YR PRIN SPWY DESIGN STORM *****																

171.8	0	0.0	24	5.9 *	189.5 E	1846	6.4	400 *	192.0	205 *	196.8	31	51 *	*****		
174.6	100	0.3	6930	47	14650	8.6 *	174.6 T	143	0.5	4850 *	187.2	162 *	192.1	26	32 *	0.36
182.8	782	2.7	1180	121	7630	16.7 *	193.3 E	2604	9.1	350 *	195.6	235 *	200.3	34	68 *	1.55
191.3	2145	7.5	590	199	6310	25.2 *	191.3 T	2188	7.6	570 *	199.8	270 *	203.8	38	90 *	2.89
197.3	3508	12.2	430	250	5980	31.4 *	197.3 T	3551	12.3	420 *	199.8	271 *	202.8	37	84 *	3.72
197.5	3542	12.3	430	251	6000	31.5 *	197.5 T	3585	12.5	420 *	200.0	272 *	203.0	37	84 *	3.74

(1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

◆◆ DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. ◆◆

EXISTING SITE SC-5010 (Leonard Pond)

Location: On an unnamed tributary to Still Brook at South West Street in Agawam, Mass.

West Springfield, Mass.-Conn. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
202	5.5	8	(Acres)	(Sq. Mi.)
			1,800	2.82

Potential for Expansion: Pool level could be raised 10 feet without affecting facilities, but a large area of shallow water would be created.

Remarks: This is a 200-foot long section of the embankment of South West Street. The principal spillway is a 48-inch asphalt coated corrugated metal pipe located in the left abutment. A sluice gate is located about 150 feet south of the principal spillway. Both slopes of the dam are heavily covered with trees and brush.

Ownership and Use: The pond is owned by Myron & Irene Moraczewski and is used for recreation.

EXISTING SITE SC-5011 (Harts Pond)

Location: On an unnamed tributary to Still Brook about 6,800 feet upstream from South West Street in Agawam, Mass.

West Springfield, Mass.-Conn. USGS quadrangle

<u>Surface Elevation</u>	<u>Surface Area (Acres)</u>	<u>Height of Dam (Ft.)</u>	<u>Drainage Area</u>	
212	5	3	(Acres)	(Sq. Mi.)
			1,000	1.56

Potential for Expansion: Topography would require a long dam. See Site Data and Summary Table for Potential Site SC-5003 located about 1,000 feet upstream in a more practical location.

Remarks: The dam is an earthfill structure about 180 feet long. The spillway is a 30-inch corrugated metal pipe. Stoplogs can be placed at the inlet of the pipe to raise the water level by 1.5 feet. Both slopes of the dam are covered with brush. The concrete in the spillway headwall is cracked.

Ownership and Use: The pond is owned by Charles F. Gogulski and is used for recreation.

STONY RIVER (SC-50)
SOUTHERN CONNECTICUT RIVER STUDY AREA
MASSACHUSETTS
EXISTING AND POTENTIAL RESERVOIR SITES
UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE



LEGEND

- WATERSHED BOUNDARY
- DRAINAGE AREA ABOVE STRUCTURE
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE
- EXISTING POND OR RESERVOIR

2000 0 2000
SCALE IN FEET



Source - U.S.G.S. Quad Sheets
West Springfield - 1970

SOUTHERN CONNECTICUT VALLEY STUDY AREA
SITE DATA FOR

Subwatershed SC-51, Scantic River

The Massachusetts portion of the Scantic River subwatershed covers about 19,100 acres in East Longmeadow, Hampden, Monson, and Wilbraham; all in Hampden County.

The major stream is the Scantic River which originates in Stafford, Connecticut and flows northwesterly through Monson, Mass. to Hampden. Near the Hampden-East Longmeadow town line, the river turns and flows nearly due south into Somers, Connecticut.

Geology of the potential reservoir sites is characterized by silty sand with gravel, cobbles, and boulders (glacial till), or glacial outwash underlain by gneiss or triassic sandstone and shale bedrock.

Thirteen potential reservoir sites and three existing reservoirs were studied.

POTENTIAL SITE SC-5101

Location: On Big Brook about 3,500 feet downstream from Monson Road in Wilbraham, Mass.

Hampden, Mass. USGS quadrangle

Latitude: 42°06'09" Longitude: 72°23'20"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Monson Rd. & utilities	555
	High tension lines	542
	Hollow Road	545

POTENTIAL SITE SC-5101 (cont'd)

Geologic Conditions: Both abutments are thin discontinuous deposits of silty sand with gravel, cobbles, and boulders, and outcrops of gneiss. Surficial deposits are swamp, glacial till, and gneiss bedrock. Depth to bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 555, an auxiliary dike will be required.

POTENTIAL SITE SC-5102

Location: On East Brook about 6,500 feet upstream from Glendale Road in Hampden, Mass.

Hampden, Mass. USGS quadrangle

Latitude: $42^{\circ}06'02''$ Longitude: $72^{\circ}23'20''$

Facilities Affected: None below elevation 618

Geologic Conditions: Both abutments and the surficial deposits are silty sand with gravel, cobbles, and boulders (glacial till). Depth to gneiss bedrock in the foundation is estimated to be 20 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-5103

Location: On Big Brook about 10,300 feet upstream from Scantic Road in Hampden, Mass.

Hampden, Mass. USGS quadrangle

Latitude: 42°05'11" Longitude: 72°24'25"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	North Rd. & utilities	475
	House	472
	High tension lines	387

Geologic Conditions: The right abutment is gneiss bedrock to about elevation 400, and then thin glacial till. The right abutment is silty sand with gravel cobbles, and boulders (glacial till). Surficial deposits are glacial till and gneiss bedrock. Waterholding capabilities appear to be good. Borrow material for dam construction was not located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-5104

Location: On East Brook about 400 feet upstream from Glendale Road in Hampden, Mass.

Hampden, Mass. USGS quadrangle

Latitude: 42°05'07" Longitude: 72°23'41"

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	High tension lines	525

Geologic Conditions: Both abutments are silty sand with gravel and cobbles (glacial till): shallow to bedrock. Surficial deposits are swamp and glacial till. Depth to gneiss bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-5105

Location: On Big Brook about 2,700 feet upstream from Scantic Road in Hampden, Mass.

Hampden, Mass. USGS quadrangle

Latitude: 42°04'13" Longitude: 72°24'33"

Facilities Affected: None below elevation 385

Geologic Conditions: Both abutments are outwash sand and gravel to about elevation 400, then silty sand with gravel and cobbles (glacial till). Surficial deposits are swamp, outwash sand and gravel, and glacial till. Depth to gneiss bedrock in the foundation is estimated to be from 25 to 30 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-5106

Location: On Temple Brook about 200 feet upstream from Hampden Road in Monson, Mass.

Monson, Mass. USGS quadrangle

Latitude: 42°04'07" Longitude: 72°21'31"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Springfield Sportsmen Club	730

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). Surficial deposits are swamp, valley fill sand and gravel, and glacial till. Depth to gneiss bedrock in the foundation is estimated to be from 25 to 30 feet. Waterholding capabilities appear to be fair to good. There may be leakage in the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-5107

Location: On Temple Brook about 2,700 feet downstream from Butler Road in Monson, Mass.

Monson, Mass. USGS quadrangle

Latitude: $42^{\circ}03'52''$ Longitude: $72^{\circ}21'31''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	730
	House and garage	715
	House	712
	House and barn	710
	House	708
	Wood Hill Rd. & utilities	705
	Hampden Rd. & utilities	703
	Butler Rd. & utilities	703

Geologic Conditions: The left abutment is silty sand with gravel, cobbles, and boulders (glacial till). The right abutment is outwash sand and gravel. Surficial deposits are outwash sand and gravel. Depth to bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be poor. Leakage is expected through the right abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-5108

Location: On Scantic River about 3,000 feet upstream from Chapin Road in Hampden, Mass.

Hampden, Mass. USGS quadrangle

Latitude: $42^{\circ}03'43''$ Longitude: $72^{\circ}24'17''$

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	2 Houses and barn	335
	Scantic Road	335
	High pressure gas line	310

POTENTIAL SITE SC-5108 (cont'd)

Geologic Condition: The left abutment is outwash sand and gravel to about elevation 390, then silty sand with gravel and cobbles (glacial till). The right abutment is outwash sand and gravel. Surficial deposits are swamp, outwash sand and gravel, and glacial till. Depth to gneiss bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

This is substantially the same site as Site MC3-3 that was included in the Comprehensive Study of the Connecticut River Basin, U.S. Department of Agriculture, June 1970.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-5109

Location: On an unnamed tributary to Watchaug Brook about 300 feet upstream from Main Street in East Longmeadow, Mass.

Hampden, Mass. USGS quadrangle

Latitude: 42°03'11" Longitude: 72°29'27"

Facilities Affected:	Facility	Elevation
	House and pool	248
	High tension lines	245
	High tension lines	239

Geologic Conditions: Both abutments are bedded fine lacustrine sands and silt. Surficial deposits are swamp and lacustrine sand and silt. Depth to triassic sandstone, shale bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be fair to good. Slight leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-5110

Location: On an unnamed tributary to Watchaug Brook about 2,000 feet downstream from Pease Road in East Longmeadow, Mass.

Hampden, Mass. USGS quadrangle

Latitude: 42°02'28" Longitude: 72°29'13"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	House	239
	House	238
	House	235
	Somers Road & utilities	232
	2 Houses	231
	Gas line	230
	Pond St. & utilities	230
	Lee St. and utilities	230
	House	221
	House	220
	Pease Road & utilities	210

Geologic Conditions: Both abutments are bedded sand and silt at the toe of the slope and poorly graded sands about halfway up the abutments. Surficial deposits are swamp and lacustrine sand and silt. Depth to triassic sandstone, shale bedrock is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be fair to good. Slight leakage is expected through both abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. If the site is developed to elevation 235 an auxiliary dike will be required.

POTENTIAL SITE SC-5111

Location: On Rockadundee Brook about 1,100 feet upstream from Rockadundee Road in East Longmeadow, Mass.

Hampden, Mass. USGS quadrangle

Latitude: 42°02'33" Longitude: 72°23'05"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Rockadundee Rd. & utilities	405
	Road	435

POTENTIAL SITE SC-5111 (cont'd)

Geologic Conditions: Both abutments and the surficial deposits are silty sand with gravel, cobbles, and boulders (glacial till). Depth to gneiss bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-5112

Location: On Watchaug Brook about 5,000 feet downstream from Main St. in East Longmeadow, Mass.

Hampden, Mass. USGS quadrangle

Latitude: 42°02'09" Longitude: 72°23'50"

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Route 83 & utilities	235
	Mill St. & utilities	225
	Power line	218
	Gas line	215
	Pease Rd. & utilities	210

Geologic Conditions: Both abutments are outwash sand and gravel. Surficial deposits are swamp and outwash sand and gravel. Depth to triassic sandstone, shale bedrock is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be fair to poor. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

POTENTIAL SITE SC-5114

Location: On an unnamed tributary to the Scantic River about 700 feet upstream from St. Germain Road in Monson, Mass.

Monson, Mass. USGS quadrangle

Latitude: $42^{\circ}02'51''$ Longitude: $72^{\circ}21'55''$

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	2 Garages	575
	House and barn	570

Geologic Conditions: Both abutments are silty sand with gravel (englacial drift) and with some thin gravel on the right abutment. Surficial deposits are englacial drift. Depth to bedrock in the foundation is estimated to be from 10 to 15 feet. Water-holding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. See existing Site SC-5114 for data on the existing dam and reservoir at this site.

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-SOUTHERN CONNECTICUT VALLEY										SUBWATERSHED SCANTIC RIVER									
BENEFICIAL POOL										EMERGENCY SPILLWAY									

SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-SOUTHERN CONNECTICUT VALLEY SUBWATERSHED SCANTIC RIVER									
BENEFICIAL POOL									
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST/ SURF AC	DEPTH AT DAM (FT)	CREST ELEV ++ TYPE (MSL)	STORAGE AT CREST AC FT IN	DESIGN HIGH WATER ELEV AREA ELEV (MSL)	SAFE YIELD AT 95 PERCENT CHANCE (1000 CY) * (MGD)
(MSL)	AC FT	IN	AC	(\$)	AC	FT	IN	AC	FT
DA= 1.34 SQ MI = 858 AC USGS QUAD-HAMPDEN									
SITE-SC-5104									
SITE RATING (1)									
493.7	C	0.0	3	5570	15	37140	7.8	520.9	E
505.9	100	1.4	15	2180	31	27060	32.2	528.7	E
518.2	381	5.3	56	20950	45.3	537.8	E	542.5	T
531.3	943	13.2	78	20160	56.5	542.5	T	542.5	T
542.5	1696	23.7	930	20160	56.5	542.5	T	542.5	T
LATITUDE 42-05-07 LONGITUDE 72-23-41									
RUNOFF = 7.80 IN, PEAK FLOW = 390 CFS									
493.7	C	0.0	3	5570	15	37140	7.8	520.9	E
505.9	100	1.4	15	2180	31	27060	32.2	528.7	E
518.2	381	5.3	56	20950	45.3	537.8	E	542.5	T
531.3	943	13.2	78	20160	56.5	542.5	T	542.5	T
542.5	1696	23.7	930	20160	56.5	542.5	T	542.5	T
LATITUDE 42-04-13 LONGITUDE 72-24-33									
SITE-SC-5105									
SITE RATING (3)									
314.4	0	0.0	9	5140	24	21670	3.4	344.0	E
320.5	100	0.7	43	1200	43	17930	9.5	320.5	T
336.6	648	4.8	76	14830	43.8	367.2	E	382.2	E
354.7	1743	12.8	99	15140	62.6	382.2	E	382.2	E
373.7	3387	25.0	440	15140	62.6	382.2	E	382.2	E
LATITUDE 42-04-07 LONGITUDE 72-21-05									
SITE-SC 5106									
SITE RATING (2)									
696.5	0	0.0	4	3860	17	22490	2.5	711.0	E
705.5	100	2.3	32	1660	32	22250	11.5	714.0	E
718.5	422	9.8	39	1250	46	27210	24.5	725.0	E
727.5	744	17.4	46	27210	41.0	739.5	E	739.5	E
735.0	1067	25.0	1170	27210	41.0	739.5	E	739.5	E
LATITUDE 42-04-07 LONGITUDE 72-21-05									
RUNOFF = 7.70 IN, PEAK FLOW = 230 CFS									
696.5	0	0.0	4	3860	17	22490	2.5	711.0	E
705.5	100	2.3	32	1660	32	22250	11.5	714.0	E
718.5	422	9.8	39	1250	46	27210	24.5	725.0	E
727.5	744	17.4	46	27210	41.0	739.5	E	739.5	E
735.0	1067	25.0	1170	27210	41.0	739.5	E	739.5	E

** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

BENEFICIAL POOL * EMERGENCY SPILLWAY * DESIGN * DAM * SAFE

	* *	* HIGH WATER *	* YIELD *
AT 95	*	*	*
AT 90	*	*	*
AT 85	*	*	*
AT 80	*	*	*
AT 75	*	*	*
AT 70	*	*	*
AT 65	*	*	*
AT 60	*	*	*
AT 55	*	*	*
AT 50	*	*	*
AT 45	*	*	*
AT 40	*	*	*
AT 35	*	*	*
AT 30	*	*	*
AT 25	*	*	*
AT 20	*	*	*
AT 15	*	*	*
AT 10	*	*	*
AT 5	*	*	*
AT 0	*	*	*

ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST/ SURF AC	DEPTH AT DAM	* CREST * ELEV *+ TYPE	STORAGE AT CREST	COST PER AC FT	* * *	ELEV * *	AREA * *	* TOP * ELEV *	HGT	FILL VOL (1000 CY)	* PERCENT * CHANGE *
(MSL)	AC FT	(\$)	(AC)	(\$)	(FT)	(MSL)	AC FT	(\$)	IN	(MSL)	(AC)	(MSL)	FT		(MGD)

SITE-SC-5107
SITE RATING (3)
DA= 1.80 SQ MI = 1152 AC
STREAM WATER QUALITY (B)
USGS QUAD-MONSON
100-YR PRIN SPHY DESIGN STORM
LATITUDE 42-03-52 LONGITUDE 72-21-31
RUNOFF = 7.70 IN, PEAK FLOW = 517 CFS

Iteration	0	0.0	2	16.4	*	707.9	E	696	7.1	1680	*	710.2	70	*	714.5	55	147	*	****
676.4	0	0.0	2	16.4	*	707.9	E	696	7.1	1680	*	710.2	70	*	714.5	55	147	*	****
691.5	100	1.0	14	31.5	*	691.5	T	114	1.2	11220	*	704.0	48	*	709.2	49	112	*	0.27
703.3	447	4.6	45	43.3	*	713.8	E	1119	11.7	1260	*	716.2	86	*	720.5	61	196	*	0.72
714.3	1141	11.8	81	54.3	*	720.8	E	1743	18.2	960	*	723.2	109	*	727.2	67	264	*	1.23
722.5	1908	19.9	106	62.5	*	722.5	T	1923	20.0	1040	*	727.0	122	*	730.0	70	304	*	1.55

SITE-SC-5108
SITE RATING (3)
DA= 13.40 SQ MI = 8576 AC
STREAM WATER QUALITY (B) USGS QUAD-HAMPDEN
100-YR PRIN SPWY DESIGN STORM RUNOFF = 7.80 IN, PEAK FLOW = 3549 CFS
LATITUDE 42-03-43 LONGITUDE 72-24-17

310.6	0	0.0	33	5.6 *	331.5 T	2966	4.1	660 *	338.0	252 *	343.2	38	84 *	*****
THIS SITE LACKS SUFFICIENT STORAGE FOR BENEFICIAL WATER.														

* * * * *

* * * * *

* * * * *

* * * * *

```

*****
SITE-SC-5109
SITE RATING (2)
*****
DA= 1.41 SQ MI = 902 AC
*****
STREAM WATER QUALITY (B)
*****
USGS QUAD-HAMPDEN
*****
100-YR PRIN SPWY DESIGN STORM
*****
LATITUDE 42-03-11 LONGITUDE 72-29-27
*****
RUNOFF = 7.70 IN, PEAK FLOW = 405 CFS
*****

```

[illegible]

NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.

(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.

(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T= TWO SPILLWAYS, N= NONE

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

*** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. ***

BENEFICIAL POOL

ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST/ SURF AC	DEPTH AT DAM	* CREST ELEV + TYPE	STORAGE AT CREST	COST PER AC FT	* HIGH WATER	* YIELD AT 95 PERCENT CHANCE
(MSL)	AC FT	IN (\$)	(AC)	(\$)	(FT)	(MSL) +	AC FT IN	(\$)	(MSL) (AC)	(CY) (MGD)

SITE RATING	(2)	STREAM WATER QUALITY (B)	#	100-YR PRIN SPWY DESIGN STORM	#	RUNOFF = 7.70 IN, PEAK FLOW = 746 CFS	LONGITUDE
216.1	0	0.0	11	234.7 E	1188	7.3	239.8
221.2	100	0.6	30	233.7 E	1041	6.4	239.5
225.7	286	1.7	4050	225.7 T	310	1.9	239.8
228.6	472	2.9	2430	228.6 T	496	3.0	239.0
232.5	844	5.1	1670	232.5 T	868	5.4	240.3
232.5	846	5.1	1670	232.5 T	870	5.4	240.3
236.3	195	236.3	930	236.3	195	236.3	239.8
239.5	48	239.5	1040	239.5	48	239.5	239.5
239.8	50	239.8	3730	239.8	50	239.8	239.8
239.0	45	239.0	2310	239.0	45	239.0	239.0
240.3	59	240.3	1620	240.3	59	240.3	240.3
240.3	60	240.3	1620	240.3	60	240.3	240.3

***** SITE-SC 5112 *****																				
SITE RATING (3)		DA= 7.02 SQ MI = 4493 AC		USGS QUAD-HAMPDEN		LATITUDE 42-02-09		LONGITUDE 72-28-50												
		STREAM WATER QUALITY (B)		100-YR PRIN SPWY DESIGN STORM		RUNOFF = 7.70 IN, PEAK FLOW =		1431 CFS												
208.1	100	0.3	9230	57	16240	5.1	208.1	T	156	0.4	5910	*	219.8	247	*	224.3	21	45	*	0.37
211.7	392	1.0	2040	107	7440	8.7	211.7	T	448	1.2	1780	*	219.8	246	*	223.5	20	41	*	1.06
214.0	684	1.7	1230	146	5730	11.0	214.0	T	740	2.0	1130	*	219.7	244	*	222.7	20	37	*	1.58
215.8	976	2.5	950	178	5240	12.8	215.8	T	1032	2.8	900	*	220.0	248	*	223.0	20	38	*	1.97
												*			*				*	

```
*****  
**  
*****  
**  
*****  
**  
*****  
**  
*****  
**  
*****  
**  
*****  
**  
*****  
**  
*****  
**  
*****  
**  
*****  
**  
*****  
NOTES - (1) COSTS ARE BASED ON 1972 S.C.S. DESIGN CRITERIA AND COST DATA.  
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.  
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T=TWO SPILLWAYS, N= NONE  
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.  
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE  
CONSIDERED ACCURATE TO THAT DEGREE.  
  
** DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. **
```


() EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.
() EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, F=TWO SPILLWAYS, N= NONE
() TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.
() ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

EXISTING SITE SC-5114 (Boulder Hill Pond)

Location: On an unnamed tributary to the Scantic River about 700 feet upstream from St. Germain Road in Monson, Mass.

Monson, Mass. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)	
<u>563</u>	<u>5</u>	<u>13</u>	<u>650</u>	<u>1.02</u>

Potential for Expansion: Please refer to Site Data and Design Summary Table for Potential Site SC-5114.

Remarks: The dam is a concrete structure about 150 feet long with a two-step weir located in the center. The principal spillway is a 10-foot wide by 6-inch deep weir which has a total fall of about 15 feet. The emergency spillway is a 30-foot wide by 1-foot deep weir. A rock fill is located downstream of and adjacent to the dam. The structure appears to be well maintained.

Ownership and Use: The pond is owned by Mr. St. Germain and used for recreation.

EXISTING SITE SC-5120 (Bradley Pond)

Location: On an intermittent tributary of Temple Brook about 600 feet upstream from Wood Hill Road in Monson, Mass.

Monson, Mass.-Conn. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)	
<u>790</u>	<u>5</u>	<u>15</u>	<u>250</u>	<u>0.39</u>

Potential for Expansion: Steep topography and the small drainage area limit the potential for expansion.

Remarks: The dam is a rock masonry dam about 150 feet long with a 20-foot wide wier in the center portion. The weir is one foot deep and has a fall of 6 feet. The downstream face of the dam is vertical.

Ownership and Use: The pond is owned by the Springfield Sportsmen's Club and is used for recreation.

EXISTING SITE SC-5122 (Lunden Dam)

Location: On an unnamed tributary of Temple Brook about 2,300 feet southwest of the intersection of Lower Hampden Road and Butler Road in Monson, Mass.

Monson, Mass.-Conn. USGS quadrangle

Surface Elevation	Surface Area (Acres)	Height of Dam (Ft.)	Drainage Area (Acres) (Sq. Mi.)
<u>687</u>	<u>6</u>	<u>10</u>	<u>150 0.23</u>

Potential for Expansion: Steep topography and the small drainage area limit the potential for expansion.

Remarks: The dam is an earthfill structure about 300 feet long. The principal spillway is a 24-inch corrugated metal pipe with a 30-inch riser and concrete headwall at the outlet. The emergency spillway is a 30-foot wide vegetated spillway located on the right abutment. The dam appears to be well maintained.

Ownership and Use: The site is owned by Mr. C.W. Lunden and is used for recreation.



SC-5114
Boulder Hill Pond



SC-5120
Bradley Pond



SC-5122
Lunden Dam



EXISTING RESERVOIRS
SUBWATERSHED SC-51
SCANTIC RIVER



LEGEND

WATERSHED BOUNDARY

DRAINAGE AREA ABOVE STRUCTURE

POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE

EXISTING POND OR RESERVOIR



SCANTIC RIVER (SC-51)

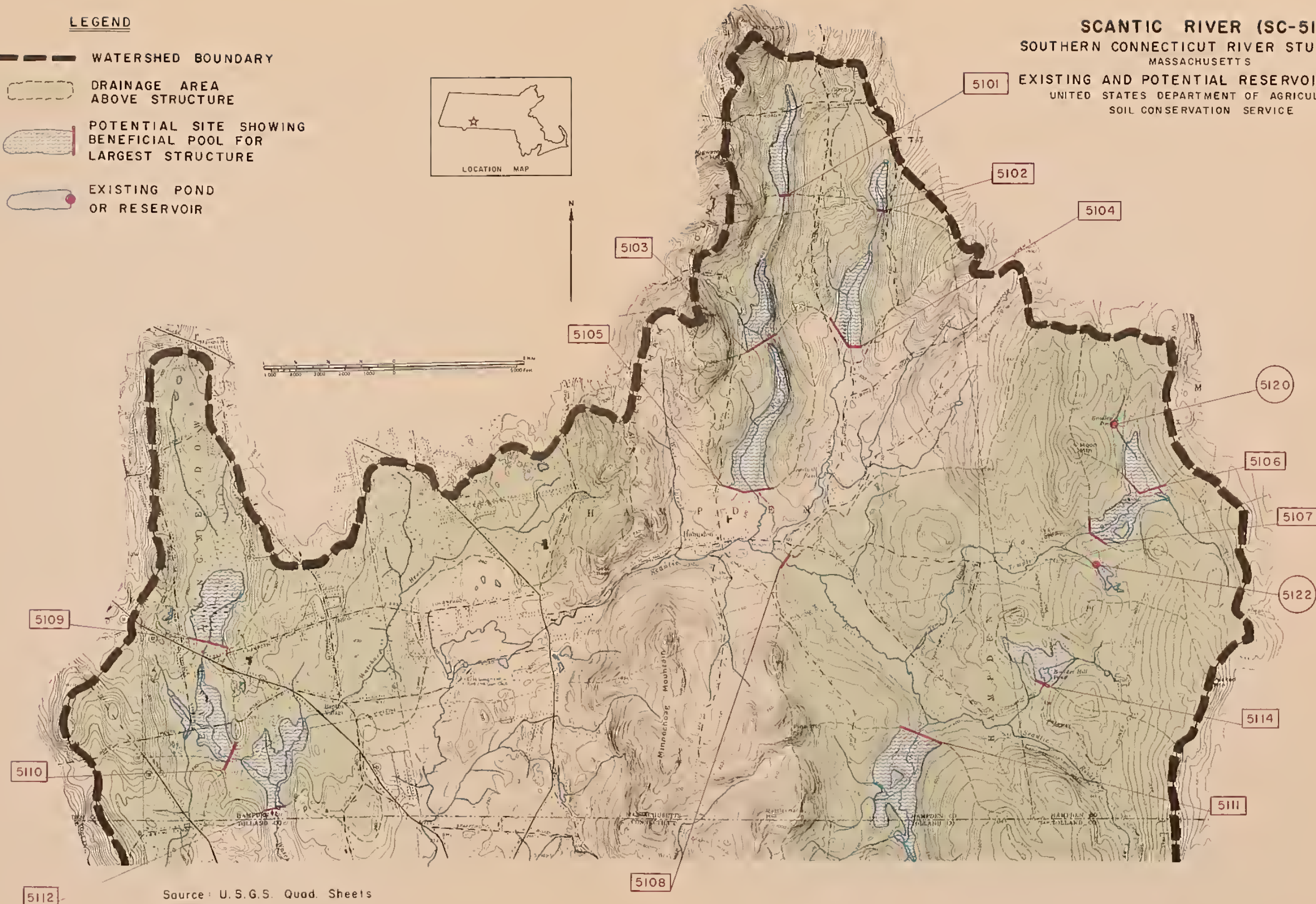
SOUTHERN CONNECTICUT RIVER STUDY AREA

MASSACHUSETTS

EXISTING AND POTENTIAL RESERVOIR SITES

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE



Source: U. S. G. S. Quad. Sheets

Monson - 1967

Hampden - 1958

Springfield South - 1958

MUNICIPAL INDEX OF RESERVOIR SITE INFORMATION

<u>City or Town</u>	<u>Site No.</u>	<u>Narrative Information Page</u>	<u>Design Summary Page</u>
Amherst	CV-1903	51	52
	CV-1904	51	53
	CV-1912	55	-
	CV-2101	65	70
	CV-2102	66	70
	CV-2106	68	71
Agawam	SC-4802	150	152
	SC-4803	150	152
	SC-4805	151	153
	SC-4811	154	-
	SC-5002	159	161
	SC-5004	160	161
	SC-5010	162	-
	SC-5011	162	-
Belchertown	CV-2113	74	-
	CV-2502	124	128
	CV-2503	125	128
	CV-2504	125	129
	CV-2508	127	130
Bernardston	NC-0805	13	20
	NC-0807	14	21
	NC-0809	15	21
	NC-0904	27	30
	NC-0905	28	30
Chicopee	CV-2614	142	-
Deerfield	CV-1701	31	33
	CV-1702	31	33
	CV-1703	32	33
	CV-1703	35	-
	CV-2001	57	61
Easthampton	CV-2303	96	98
	CV-2310	99	-
	CV-2311	99	-
	CV-2312	101	-
	CV-2412	107	116
	CV-2415	109	117
	CV-2417	110	118

MUNICIPAL INDEX OF RESERVOIR SITE INFORMATION

<u>City or Town</u>	<u>Site No.</u>	<u>Narrative Information</u> <u>Page</u>	<u>Design Summary</u> <u>Page</u>
East Longmeadow	SC-5109	168	174
	SC-5110	169	175
	SC-5111	169	175
	SC-5112	170	175
Gill	NC-0810	16	21
	NC-0812	17	22
	NC-0813	18	22
Goshen	CV-2205	77	85
	CV-2220	90	-
	CV-2221	90	-
Granby	CV-2501	124	128
	CV-2507	127	129
	CV-2510	131	-
	CV-2511	132	-
	CV-2604	134	137
	CV-2605	135	138
	CV-2606	135	138
Greenfield	NC-0906	28	30
Hadley	CV-1913	56	-
	CV-2104	66	70
	CV-2105	67	71
	CV-2114	74	-
Hampden	SC-5102	164	172
	SC-5103	165	172
	SC-5104	165	173
	SC-5105	166	173
	SC-5108	167	173
Hatfield	CV-2008	60	62
Holyoke	CV-2304	96	98
	CV-2305	97	98
	CV-2608	139	-
	CV-2611	140	-
	CV-2612	141	-

MUNICIPAL INDEX OF RESERVOIR SITE INFORMATION

<u>City or Town</u>	<u>Site No.</u>	<u>Narrative</u> <u>Information</u>	<u>Design</u> <u>Summary</u>
		<u>Page</u>	<u>Page</u>
Leverett	CV-1808	40	44
	CV-1901	49	52
	CV-1902	50	52
	CV-1910	54	-
Leyden	NC-0901	25	29
	NC-0902	26	29
	NC-0903	26	29
Longmeadow	SC-4806	151	153
	SC-4812	155	-
	SC-4901	157	-
Monson	SC-5106	166	173
	SC-5107	167	173
	SC-5114	171, 177	176
	SC-5120	177	-
	SC-5122	178	-
Montague	CV-1704	32	34
	CV-1806	39	43
	CV-1811	46	-
Montgomery	CV-2413	108	116
Northampton	CV-2009	60	63
	CV-2210	80, 89	87
	CV-2212	81	87
	CV-2213	82	88
	CV-2214	82	88
	CV-2215	83	88
	CV-2226	93	-
	CV-2227	93	-
	CV-2228	94	-
	CV-2408	105	115
	CV-2409	105	115
	CV-2410	106	115
	CV-2418	111	118
	CV-2426	121	-

MUNICIPAL INDEX OF RESERVOIR SITE INFORMATION

<u>City or Town</u>	<u>Site No.</u>	<u>Narrative Information Page</u>	<u>Design Summary Page</u>
Northfield	NC-0802	12	19
	NC-0804	13, 23	20
	NC-0806	14	20
	NC-0808	23	-
	NC-0811	16	22
	NC-0820	24	-
	NC-0821	24	-
Pelham	CV-2107	68	71
	CV-2111	72	-
	CV-2112	73	-
Shutesbury	CV-1810	41	44
	CV-1814	47	-
	CV-1815	48	-
	CV-1911	54	-
	CV-2110	72	-
Southampton	CV-2411	107	116
	CV-2414	108	117
	CV-2416	109, 120	118
	CV-2417	110	118
	CV-2419	111	119
	CV-2420	112	119
	CV-2427	121	-
	CV-2428	122	-
	CV-2429	122	-
South Hadley	CV-2506	126	129
	CV-2509	131	-
	CV-2512	132	-
	CV-2601	133	137
	CV-2602	134	137
	CV-2609	139	-
	CV-2610	140	-
	CV-2613	141	-
Southwick	SC-5003	160	161

MUNICIPAL INDEX OF RESERVOIR SITE INFORMATION

<u>City or Town</u>	<u>Site No.</u>	<u>Narrative Information</u> <u>Page</u>	<u>Design Summary</u> <u>Page</u>
Springfield	SC-4702	143	145
	SC-4703	144	145
	SC-4704	146	-
	SC-4705	146	-
	SC-4706	147	-
	SC-4707	147	-
	SC-4801	149	152
	SC-4810	154	-
Sunderland	CV-1710	35	-
	CV-1711	36	-
	CV-1712	36	-
Warwick	NC-0701	9	10
	NC-0801	11	19
	NC-0803	12	19
Wendell	CV-1802	37	42
	CV-1803	38, 45	42
	CV-1807	39, 45	43
	CV-1812	46	-
	CV-1813	47	-
Westhampton	CV-2211	81	87
	CV-2401	101	113
	CV-2402	102	113
	CV-2404	102	113
	CV-2405	103	114
	CV-2406	103	114
	CV-2407	104	114
	CV-2425	120	-
West Springfield	CV-2607	135	138
Whately	CV-2003	58	61
	CV-2004	58	61
	CV-2005	59	62
	CV-2007	59	62
	CV-2010	64	-
	CV-2011	64	-

MUNICIPAL INDEX OF RESERVOIR SITE INFORMATION

<u>City or Town</u>	<u>Site No.</u>	<u>Narrative Information</u> <u>Page</u>	<u>Design Summary</u> <u>Page</u>
Wilbraham	SC-5101	163	172
Williamsburg	CV-2201	75	84
	CV-2202	76	84
	CV-2203	76	84
	CV-2204	77	85
	CV-2206	78, 89	85
	CV-2207	78	86
	CV-2208	79	86
	CV-2209	79	86
	CV-2222	91	-
	CV-2223	91	-
	CV-2224	92	-
	CV-2225	92	-

APPENDIX

This report is one of a series dealing with reservoir sites. Previous reports in the series are:

1. Study of Possible Water Storage Areas, Ipswich River Watershed, January 14, 1965.
2. Study of Possible Water Storage Sites, Upper Hoosic River and Upper Housatonic River, February 1966.
3. A Study of Potential Reservoir Sites in Massachusetts, Hudson River Basin, January 1968.
4. A Study of Potential Reservoir Sites, Housatonic Study Area, Massachusetts, June 1969.
5. Inventory of Potential and Existing Reservoir Sites, Merrimack Study Area, Massachusetts, March 1970.
6. Inventory of Potential Reservoir Sites, Neponset Study Area, Massachusetts, October 1970.
7. Inventory of Potential and Existing Upstream Reservoir Sites, Thames Study Area, Massachusetts, January 1971.
8. Inventory of Potential and Existing Upstream Reservoir Sites, Parker and North Shore Study Area, Massachusetts, June 1971.
9. Inventory of Potential and Existing Upstream Reservoir Sites, Nashua Study Area, Massachusetts, March 1972.
10. Inventory of Potential and Existing Upstream Reservoir Sites, Deerfield Study Area, Massachusetts, November 1972.
11. Inventory of Potential and Existing Upstream Reservoir Sites, Chicopee Study Area, Massachusetts, May 1973.
12. Inventory of Potential and Existing Upstream Reservoir Sites, Taunton and Narragansett Bay Study Areas, Massachusetts, January 1974.
13. Inventory of Potential and Existing Upstream Reservoir Sites, Ipswich Study Area, May 1974.
14. Inventory of Potential and Existing Upstream Reservoir Sites, Millers Study Area, July 1974.

Reports will be prepared in future years for the remainder of the state. Basic data from which this report was prepared are on file in the Soil Conservation Service Office, 29 Cottage Street, Amherst, Massachusetts 01002.

